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*See Page 19*

MODERN TRANSPORT

"THE TIMES" OF THE TRANSPORT WORLD

ELECTRO-PNEUMATIC BRAKES FOR GLASGOW

*See Page 15*

VOL. LXXXIV No. 2169 [*Registered at the G.P.O. as a newspaper*] LONDON, DECEMBER 10, 1960 PRICE ONE SHILLING

# CURRENT TOPICS

### Leyland-Standard Merger Proposed

AMALGAMATION of the Leyland and Standard-Triumph interests proposed this week by Leyland Motors, Limited, has been welcomed by the board of Standard-Triumph International, Limited, which recommends shareholders' acceptance. The amalgamation would be achieved by Leyland acquisition of the whole of the ordinary capital of Standard on the basis of two ordinary Leyland stock units of £1 each for 15 Standard ordinary stock units of 5s. each. Terms for acquisition of preference shares are yet to be announced. The proposed merger would bring Leyland back into the passenger car field after a lapse of over 30 years since the days of the magnificent Straight Eight and the unique Trojan and provide a useful footing in the panel van market. In a statement concerning the offer, Sir Henry Spurrier, Leyland chairman and managing director, said that some foreign competitors could offer a variety of products from small mass-produced cars, through light and medium vans and commercial vehicles up to the heavy vehicles which Leyland now manufactured. Despite the company's favourable present situation, it was quite obvious that it should put itself in an equally advantageous position without delay. It could not be done within the existing organisation, he said, because plant, equipment and personnel were fully occupied, but acquisition of Standard offered great development possibilities with manufacturing capacity and future potential of both companies complementary and able to dovetail well into each other's needs. Future plans, said Sir Henry, envisaged extension of the use of diesel engines into the lighter range and the further diversification of both Standard and Leyland production.

### New to the Channel Isles

FULL marks must be accorded the Southern Region of British Railways, the B.T.C. architect, Dr. F. F. C. Curtis, and Trollope and Son (London), Limited, a team which was responsible for the internal decorations and furnishing of the 4,174-ton *Caesarea*, first of the two new one-class ships which, with the refitted *St. Patrick*, are to maintain the Channel Islands services from Weymouth. References to the ships and to the revised services have already appeared in our columns on several occasions, the most recent being in the November 12 issue. Because some of the outward voyages will be made overnight, whereas the return is by day, the new ships must provide both sleeping accommodation and day rooms and are in effect an ingenious compromise. There is a choice of single- or double-berth cabins, dormitories for both sexes, adjustable reclining seats and fixed armchairs. Both dormitories and reclining seats are available for only a nominal booking fee. With seating accommodation for every passenger—a boon most obvious to those who have endured past discomforts—reduced fares and a shorter sea crossing (from Weymouth instead of Southampton) the *Caesarea* and her companions will be a powerful new attraction.

### M.I.R.A. Progress

TO achieve and maintain the highest standards of quality for the British motor vehicle industry, the Motor Industry Research Association tested an average of 50 vehicles every day on the tracks at Lindley, said Sir Bertram Waring, its president, at the association's annual luncheon last week. He saw the problem of the British motor industry as the unfolding problem of the common market; we were up against mass producers of cars with domestic markets potentially larger than ours. If we did not have reciprocal trade agreements, export to the common market countries would be quite impossible. He was quite sure British manufacturers would not lack imagination or fail to keep up with technical developments. On the M.I.R.A. test track, the wind tunnel, the ride and handling course, and the simulation of colonial hazards were recent features which aided manufacturers, apart from the 24 separate research projects which were in hand at the moment. Group research was a good way to keep research under control. The cost of M.I.R.A. was settled for the next five years, and its expansion could now be planned in an objective way, thanks to the Society of Motor Manufacturers and Traders and the Department of Scientific and Industrial Research. He paid a special tribute to Mr. V. A. Pilkington for the way in which he conducted the association, while Dr. A. Fogg, the director, and M.I.R.A. were obviously made for one another. In replying to the toast of "The Guests," Mr. Ernest Marples, Minister of Transport, expressed thanks for what was being done at M.I.R.A.; he would welcome conclusions on noise and views on pollution from exhaust fumes. We must be ahead of foreign manufacturers technically and foster the inventive genius that resided in these islands. He looked forward to action being taken on the matters investigated at M.I.R.A. by manufacturers.

### B.T.C. Shipping Training

A TRAINING conference—the first of its kind—for staff of the British Transport Commission Shipping and International Services was held recently at the B.T.C. School of Transport, New Lodge, Windsor. The aim was to give staff in the middle levels of the organisation a general background to the Commission's considerable shipping and international activities. The 22 members of the course were selected from the shipping and international services of the regions of British Railways, the Commission's subsidiary shipping companies, and B.T.C. headquarters. Among them were seagoing officers, assistants to divisional managers, headquarters assistants, and continental agents. Mr. J. L. Harrington, chief shipping and international services officer, B.T.C., opened the conference. Talks were given by specialist members of the staff on subjects such as ship design, revenue and expenditure, public relations and publicity, personnel, cargo handling, commercial and customs procedures, the place of the Commission's services in European transport, and problems arising from special kinds of traffic. The talks were followed by discussions in open forum or in syndicates, and visits were arranged to a shipyard and to a London office. The conference, which lasted for two weeks, served to foster informal contacts between sea-going and shore-based staffs, and it proved so successful that it may be followed by other conferences of a similar kind.

### Greyhounds Retire

TWO of the transatlantic greyhounds of the 1930s, the Canadian Pacific *Empress of France* and the Cunard White Star *Britannic*, are being withdrawn from service this week. Both are being sold for scrap. *Empress of France* was launched in January, 1928, as *Duchess of Bedford*, at John Brown's on Clydebank. Her maiden voyage was on the Liverpool—Montreal route, and she created a new record of 6 days 9½ hours on her second trip. She had a distinguished war record, sinking a U-boat in the North Atlantic, besides participating in the evacuation of Singapore and the landings at Salerno, Sicily and in North Africa. In 1947 she was reconditioned on the Clyde and renamed *Empress of France*. In her latest guise she carried 700 passengers and operated on the North Atlantic run. Launched in 1929, *Britannic* was built by Harland and Wolff, Limited. A 27,666-ton motor ship, she was an advanced vessel for her day, having two Harland Burmeister and Wain diesel engines. Her maiden voyage was between Liverpool and New York in June, 1930. With her two squat funnels and two tall raking masts, she was a familiar sight in both Manhattan and Merseyside. The last of the former White Star fleet, she was a ship with a reputation for comfort. May their successors, *Sylvania* and *Empress of Canada*, become as famous as the ships they replace.

### Off-Street Parking Discussed

WHILE the underground car park planned for Hyde Park was encouraging, more off-street parking facilities must be provided during the next few years, said Mr. E. H. Doubleday, county planning officer for Hertfordshire, in a paper delivered to a recent meeting of the Royal Institution of Chartered Surveyors in London. Saturation of our roads by cars had made the problem of parking on the highway more important than their primary purpose of affording a right of passage. Kerb space withdrawn from street traffic flow must be made available to as many motorists as possible. Logically, it must be used by motorists willing to occupy it for the shortest possible time. Use by motorists of parking meters already installed in Britain proved the value of the meter as a rationer of kerbside space and was slowly breaking down the traditional British habit of free parking for their cars in city areas, thus paving the way to follow the American and Continental practice of a wider use of off-street parking facilities. Mr. Doubleday thought that the alternative to parking meters, namely the disc system used in Paris, involved more police in checking the discs than the wardens employed in London to supervise parking meters. After we had derived the maximum benefit from existing kerbside space, additional off-street accommodation would have to be found, continued the speaker. The limitations of surface parking, the small size of available sites, rising operational costs and the need to provide proximity parking at low cost all pointed to mechanical parking. If American experience was any guide, competition in parking rates would develop in this country before long and therefore the location and layout of multi-storey garages required the utmost care. He thought that the American system of "validation" or "dividend" parking would become increasingly popular in this country. By this system, shoppers who parked in a store's car park could exchange parking tickets for goods purchased.

### Passing Signals at Danger

YET another case of a driver passing a danger signal is afforded by an accident which occurred in clear weather on the evening of April 25 last between Garforth and Micklefield on the North Eastern Region Leeds—York main line. A diesel multiple-unit passenger train from Leeds to Hull came into collision at speed with the rear of a goods train running at about 25 m.p.h. under clear signals. Five passengers were slightly injured, normal working being resumed at 6.45 the following morning, 9½ hours after the accident. In his report Colonel J. R. H. Robertson, inspecting officer of railways, attributes sole responsibility for the mishap to the driver of the passenger train; he passed a signal at danger "and thereafter was not sufficiently alert to see the side and tail lamps of the brake van of the train ahead in time to reduce his speed sufficiently to prevent a collision." The inspecting officer concludes that the driver, an experienced man who knew the road, let his attention wander. "Proof that his mind was not on the job" is seen in his failure to apply his brakes in time. The circumstances of the accident have been made known to the Medical Research Council which is assisting the B.T.C. in an investigation into failures of this nature. An interesting feature of this case is that, at the inspecting officer's invitation, Dr. D. Russell Davies, a member of the council's committee on human factors in railway accidents, attended the inquiry and afterwards discussed the accident with the driver in the presence of a union representative.

### A Stephenson Relic

ONE of George Stephenson's first civil engineering jobs was to lay out the Hetton Colliery railway in County Durham in 1822. The last few feet of this venture have just been lifted, but because of its historical importance local people have asked Hetton Urban District Council to preserve a section of track running on the public streets. We suppose that in most industrial countries its safeguarding would have been the task of a government department, but our Ministry of Works is perforce mainly interested in the architectural aspects of history. The railway was eight miles long and linked Hetton Lyons, Eelemore and Middleton Collieries with coal shipping staiths at Sunderland. Hetton Lyons is closed and by a National Coal Board reorganisation the output of the other two comes up through the recently completed shaft of the Hawthorn combined mine. Down to 1939 some 25,000 tons of coal a week were conveyed on the railway, on which one of the Stephenson locomotives with vertical cylinders was still at work in the 1920s. But like the knife with two new handles and three new blades this "100-year-old locomotive still at work" had had some extensive renewal in its day, as well as the addition of a cab. However, it made its mark in the railway centenary procession of 1925, as it ran at the head.

## LEADING FEATURES IN THIS ISSUE


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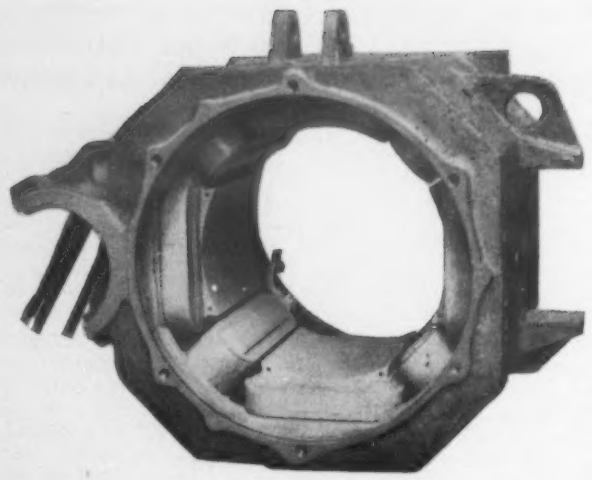
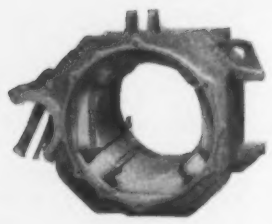
DESIGNING

AND MAKING TRACTION EQUIPMENT



Engineers today have entered upon an era of re-thinking. Something that has always been known, but which has been neglected in the more recent phase of the purely mathematical approach, is now being rediscovered. It is that engineering design is an art as well as a science. This is really no news to the good designer who goes on quietly trusting his eye and his feeling for a sound job. But where does his knowledge—his flair—come from? Quite largely, it seems, from experience. Some of it his own, much of it the common stock of the people he works with. It is the channel through which the total experience of an engineering company such as our own is fed back into new products.

It is not always easy to put one's finger on the details on which it has had an effect. In traction equipment, weight and size must be kept down and it shows up for instance in such things as good space factor obtained by careful pole design. In the design of these motors we were able to make direct use of the experience we had gained with earlier railway motors—as well as more indirectly from hundreds of other equipments built for main line locomotives, shunters, motor coaches and trolley buses.



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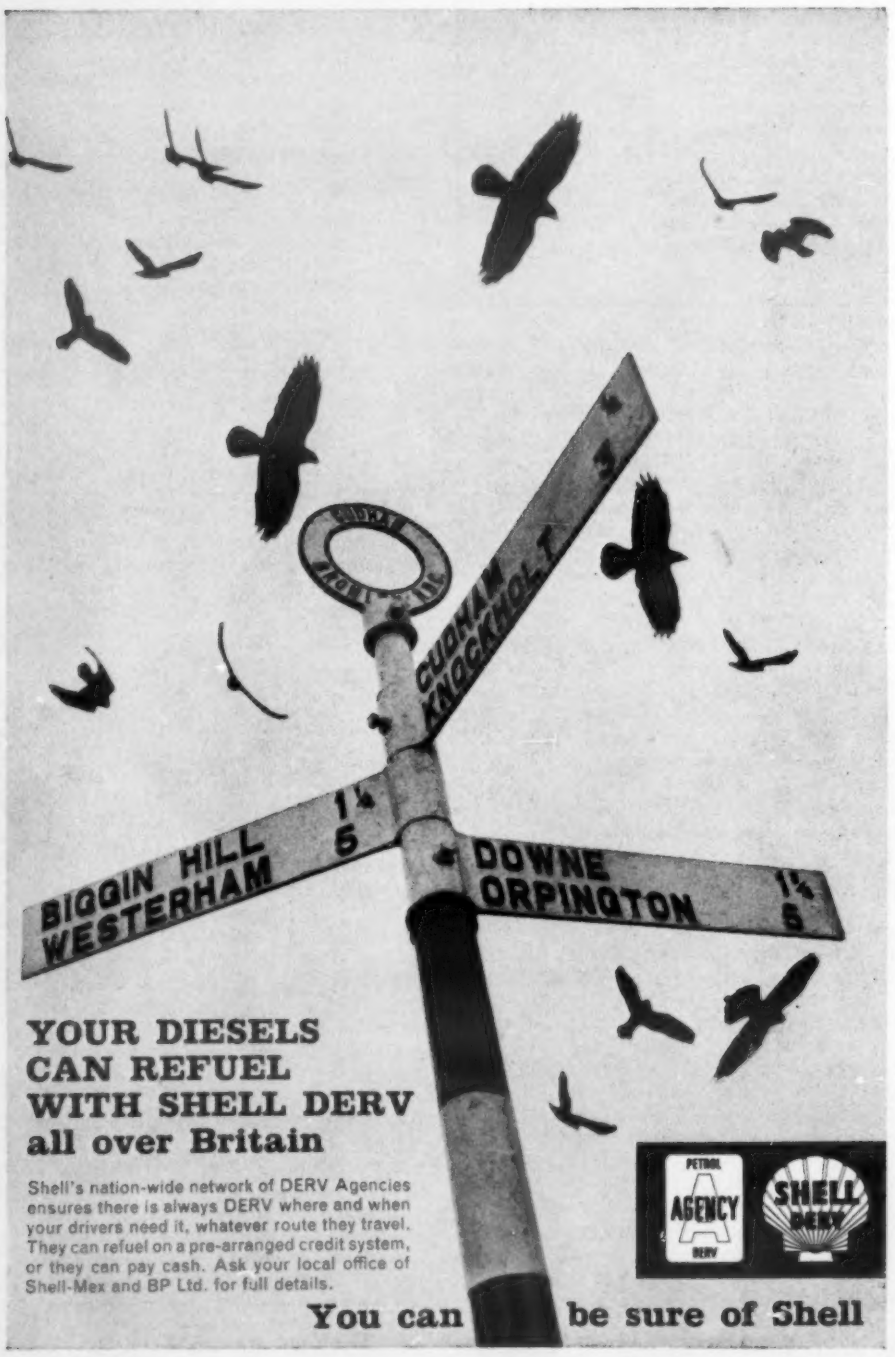


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***The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.***

★

## *New Slant on the Diesel*

NOTHING is more difficult than to make true comparisons between various forms of transport; it is an arduous task even to make entirely satisfactory deductions as to the ultimate worth of rival forms of motive power in the same form of transport. In the end there is often a bigger element of art than of science in the conclusions reached. There can, nevertheless, be no doubt of the value to transport men of contributions for discussion which stimulate fundamental thinking on these matters. Last week the Institution of Mechanical Engineers afforded a platform for a paper by Mr. H. F. Brown, the American consulting engineer, on the economic impact of diesel-electric motive power on the railways of the United States. It is of importance because it gives opportunity for those entrusted with the provision of future motive power requirements on railways to take stock and to examine whether conclusions which were right a decade ago hold good today. It is true that in Britain dense traffic makes our problems different from those of North America or the Continent of Europe where traffic is more intermittent if heavy at times. But in all countries the diesel was hailed as leading to a cleaner railway, more attractive to passengers, to a solution of the problems of obtaining good steam coal and even of obtaining good firemen and to a railway with better operating characteristics. Electric traction, let us hasten to add, can make and substantiate these claims, too.

### *A Closed Issue?*

ECONOMIES made by the earlier applications of diesel power in the U.S.A. were so marked that the question of steam versus diesel power has been regarded as a closed issue and of but academic interest in that country for the past decade. The author, we gather, does not intend to reopen it; he seeks no reversion to steam, but having examined the Interstate Commerce Commission statistics on railways in the course of an investigation of the merits of an electrification scheme, he believes that some of the facts he has marshalled deserve wider attention. By 1955 it was evident that a number of factors pertaining to diesel operation had not been known as early as 1945-50. Today they can be more clearly defined. The endeavour in the paper is to isolate the motive power statistics from the other economic influences bearing on U.S. railroads. Among the latter are the competition of automotive traffic on the highways, steadily increasing after 1920 and more rapidly since 1945, with the eventual effect of a reduction in branch railway mileage. The effect on traffics and on steam motive power stocks of the depression of 1930-40 and of the industrial upsurge of the 1939-45 war, with peaks from 1941 to 1946, is examined. Since 1920 miles of route have declined by 10 per cent, the number of passenger cars by over 40 per cent and the number of passenger trains run by 60 per cent.

### *How the Diesel Came*

IN hard times there was a need for larger and fewer trains, which produced a demand for motive power of greater horsepower. In 1924 there were 69,486 locomotives on U.S. railways while today there are roundly 30,000. But while average tractive force has risen from 40,000 lb. in 1924 to over 60,000 lb., the total tractive force in the past 36 years has remained almost undiminished. The 1,500-h.p. steam locomotive of 1915 gave place to a 5,000-h.p. machine in 1935 and to 7,000 h.p. for special duties and special routes ten years later. In 1945, however, 40 per cent of steam locomotives had been built before 1915, there having been no funds for renewals or no traffic incentive to that end from 1920 until the U.S. was brought into the war in 1941. The way was thus prepared for large-scale renewals and the fact that the first diesels were put on diagrams where they could be intensively used over long daily and weekly mileages made them highly attractive, even if it was a case of comparing new diesel-electrics with obsolescent or run-down steam locomotives. As most U.S. diesel-electric locomotives are of modest horsepower the effect of them running in multiple unit on heavy trains has to be taken into account.

### *Savings on Fuel Costs*

LATER, as the new motive power had to take over "run of the mine" duties, the high availability fell off; the average annual mileage fell from 101,000 in 1953 to 86,500 in 1957 as the numbers of locomotives grew and as steam was reduced almost to extinction. Mr. Brown argues ingeniously that improved operating statistics in this period are not attributable so much to diesel power as to the lopping off of inefficient branch operations and the loss of short-haul traffic on the remaining main lines. Getting rid of slow trains and intermediate stops has effected a small increase of average speed, again probably little to do with the diesel. On repairs Mr. Brown's analysis shows the diesel to suffer a much steeper rise in costs with age than its steam or electric counterparts. We believe that the original I.C.C. depreciation figures over 20 years for main-line diesels and 25 for switchers were reduced after an income tax case to 15 and 20 years respectively, a fact which lends some weight to this thesis. In fuel the diesel's savings are remarkable; it will be recalled that the Irish railways found the saving of the coal bill one of the most rewarding features of dieselisation. On balance, however, Mr. Brown's conclusion is that the American railways belittle their skill of management in attributing quite so much of their operating economies to the diesel; indeed, he thinks that if modern steam motive power had replaced the old the financial results might not have been materially different. To those who say he is asserting that everyone is out of step except Brown, he is apt to contend that "maybe he is listening to the band ahead." Three things emerge from this paper. One is that administrations must never let up from endeavouring to take the utmost advantage from the availability of modern motive power in diagramming the services. Then there is room for more research into the reduction of diesel repair costs by extending overhaul mileages and engine life and preventing the percolation of diesel oil into electrical equipment. The third is perhaps not altogether surprising—that the attractions of mains electricity as a motive power are revealed afresh.

## *NEWS SUMMARY*

ELECTRONIC interlocking developed by Mullard Equipment, Limited, for the Western Region of British Railways is to be installed next summer at Henley-on-Thames signal box. A working model of a double junction controlled by this method was demonstrated to signal engineers of British Railways on December 5.

A further 41 miles of the Italian motorway, "The Highway of the Sun," was opened to traffic on December 3. This section, including some notable tunnels and viaducts, is between Bologna and Florence and brings the mileage completed to 166. The entire road will join Milan and Naples.

Lecturing on the future of urban transport to the Metropolitan Section of the Institute of Transport on December 5, Mr. D. L. Munby, Reader in the Economics and Organisation of Transport, University of Oxford, made some interesting suggestions on taxation and parking charges as a means of restraining the congestion effects of the private car and also suggested the same need of a combined planning and transport operation that was felt by Mr. A. Samuels in his Royal Society of Arts lecture (abstract begins on page 3).

On December 5, Mr. A. B. B. Valentiné, chairman of London Transport, opened the new L.T.E. research laboratories at Chiswick Works. An account of the premises will appear in a subsequent issue.

The Leyland group has made an offer on a share exchange basis for the entire capital of the Standard-Triumph-International group. This will enlarge the Leyland range into the private car and panel van field.

London Transport announced on December 7 that in order to meet fully its increased financial commitments it has lodged with the Transport Tribunal a further application to increase fares. Ordinary fares for 2½ miles and upwards would be increased by 1d. and season ticket charges by about 5 per cent. It is unable to say when the new scale would be introduced but it might be necessary before the summer of 1961. Outside London the B.T.C. will be seeking a headroom of 20 per cent on railway season ticket rates above the existing authorised maxima.

# SOME TRAFFIC PROBLEMS

## *Experiences in London*

*By A. SAMUELS, C.B.E., A.M.I.Mech.E., M.Inst.T., Chairman, London and Home Counties Traffic Advisory Committee**

THE basic transport question in London should be the question how best people and goods can be moved from the place where they are to their destination. But the responsibilities for transport and traffic in London are so confused, and so tangled, that it has been almost impossible for any of the administrative bodies responsible to face the issue in these terms. It could only be faced realistically if the major responsibilities lay with one body or person. In fact, however, a great many authorities are concerned. The facts are already well known, and have been set out in detail in the Report of the Royal Commission on Local Government in London, published in October. Under the London Traffic Act, 1924, as amended and subsequently consolidated in the Road Traffic Act, 1960, the Minister of Transport was given some traffic responsibilities for London. His powers were somewhat extended by the recent Road Traffic and Roads Improvement Act of 1960.

Broadly speaking, the Minister has power to make regulations for the control of traffic on roads in London, but before making these regulations he has to consult the Home Secretary and until this year he was obliged to consult the London and Home Counties Traffic Advisory Committee as well. Apart from that he has also found it necessary to make a practice of advertising these proposals in advance and consulting the highway authority concerned. He relies on the highway authority for the implementation of his regulations (usually involving the erection of signs) and on the police for their enforcement. The Minister is also the highway authority for trunk roads. But since there are no trunk roads in the administrative county of London he has no direct control over the physical state of the roads in the central part of London, although through the grant system he has a considerable say as to which major highway improvements should be carried out.

### Police Responsibilities

Traffic signs are the primary responsibility of highway authorities and it was not until a few years ago that the Minister was given clear and extensive powers to coerce highway authorities if they should refuse to do as he asked. Within the whole of the London area, enforcement is the responsibility of the Metropolitan and City Police, with whom the Home Secretary has a special relationship. The police, through their membership of the Traffic Advisory Committee, are usually consulted directly about regulations and, as has been stated, the Minister is bound to consult the Home Secretary. The Minister has, however, no direct control over enforcement at all. The police have also, since 1956, had a direct power to carry out traffic regulation experiments, subject to the Minister's consent.

The London and Home Counties Traffic Advisory Committee is a very large body, with 45 members; it was originally set up to advise the Minister of Transport over a much wider field than the traffic problems with which it has been concerned since the war. This body contains representatives from the local authorities, the police, the trade unions, road users, the Ministry of Transport, and the Home Office. It seems that in 1924 it was hoped that the existence of this body would go some way to ensuring unified control of transport in London. In fact, it has not succeeded in achieving that particular objective. Even although the Minister consults the Committee he has still found it necessary to consult practically everybody else as well.

### Public Transport

All public transport in London is provided by the British Transport Commission through two of its constituent undertakings—the London Transport Executive and British Railways. The Executive and the Commission are both represented on the Traffic Advisory Committee as road users. It seems possible that the Traffic Advisory Committee under their statutory terms of reference could make recommendations over the field of public transport operated by the Executive. In fact, however, they have not done so recently. Recommendations as regards this field of public transport come from the Transport Users Consultative Committee for London. Certain members of the Traffic Advisory Committee serve also on the Transport Users Consultative Committee, but apart from this there is no effective liaison between the two bodies.

Finally, in this web of control, bus routes in London are primarily the responsibility of the Traffic Commissioner. Appeals from him go to the Minister of Transport, and apparently largely as the result of this, until the passing of the recent Act, the Minister felt debarred because of his appellate position from dealing with any matter of bus operation as a traffic question if there was even the possibility that there might be an appeal to him from the Commissioner's decision.

### Separate Bodies—One Problem

In 1958 the Minister appointed a special non-statutory body, the London Travel Committee, under my chairmanship, to deal in effect with the major problems of public transport in London. This of necessity worked over some of the same field as the Traffic Advisory Committee and had for a time a special sub-committee dealing with traffic. The importance of the activities of this sub-committee have diminished since the Minister's appointment earlier this year of the London Traffic Management Unit, under Dr. Charlesworth, which has taken over the job of initiating schemes of traffic improvement.

My experience with these two bodies has led me to conclude that, because of the separate and watertight responsibilities of all the authorities, the problems have been examined in isolation. But they are really different facets of a single problem. The road engineer of a local authority may consider that a particular road-widening scheme is necessary to remove congestion from his area. The local authority's housing committee may well plan the new development first, and only think of bus problems after the houses are built. A local bus superintendent may decide that a new route is desirable to serve a new housing estate in the outskirts. Traffic regulations are imposed on a particular street in order to improve the flow of traffic in that street. But all these are facets only of the main problem, which should be considered as the problem of moving people and goods as economically and rapidly as possible, taking as much account as possible of their individual transport preferences, but with a firm eye on the comfort and convenience of the majority. At present there is no person, no body and no committee which can take the broad view.

### U.S. Contrast

It is a curious fact that, in the United States of America, where the national administration is so carefully circumscribed by a constitution full of checks and balances, the administration of traffic in local affairs is extremely autocratic. As a result, America's traffic engineers are able to plan ahead and to introduce new measures in good time. In this country, where we boast that the national constitution is unwritten, we have had to cope with a system of checks and balances in the administration of London traffic which outdoes anything the founders of the American Republic ever dreamt of. The Royal Commission has now recommended a reorganisation of local government structures which would provide for a single authority to have the responsibility over the whole field of traffic and roads, but not public transport.

I am convinced of the need for a single authority (of whatever type) to have such a responsibility. I hope that those whose duty it is to consider this report will bear in mind that our whole social way of life depends on solving London's transport problem and that there is no point in having an otherwise acceptable form of local government for London if it cannot adequately face and tackle that problem. If congestion is not controlled, then London as we know it is doomed. A reconstruction of organisation and responsibility is vital to the success of any plans for dealing with London's transport problems. But I do not want to give the impression that once the organisation is there the solution is easy. There is no one solution. It is a question of pushing forward as vigorously as possible on a number of fronts, in the hope that each action will itself contribute a little towards easing the present difficulties.

### Traffic Control and Parking

The main statutory function of the Traffic Advisory Committee since the war has been to advise the Minister of Transport on proposals for traffic regulations. Its interest has been centred on the problems of how, through discipline and control, to make the best use of London's existing street system. The problem was clearly comprehended and set out by the committee in its report on London traffic congestion, issued in 1951. In its present form the problem began to pose itself quite simply when the war-time rationing of motor fuel came to an end in May, 1950.

By 1953 vehicular traffic was back to the highest density reached before the war and since then it has been increasing at an average rate of 4 per cent per year. The average flow of vehicles in main roads in Central London increased from 1,230 vehicles per hour in 1947 to 1,585 vehicles per hour in 1958, of which 42 per cent were private vehicles and 37 per cent commercial. Average journey speeds over the same period fell from 11·8 m.p.h. to 10·1 m.p.h. Of journeys through controlled intersections 53 per cent involved a stop, and the stop time, as a percentage of the total journey time, represented 36 per cent. The Road Research Laboratory, which produced these figures, says that traffic on main roads increased by 7 per cent between 1956 and 1958, and that private vehicles increased during this period by 17 per cent. There are 1,200 intersections between classified roads in the County of London with 120 in the inner area. The total route covered by this survey was approximately 40 miles, and the Road Research Laboratory says that there were 44 intersections at which the average stop time was greater than 30 seconds.

Between 1954 and 1959 the number of vehicles licensed for use on the roads of Great Britain rose from 5·4 millions to 8·2 millions. This is a rise of 52 per cent. The number of vehicles registered in the area of the County of London during the same period 1954 to 1959 rose from 400,153 to 595,542, an increase of 49 per cent. Registration of private cars, however, rose by 70 per cent from 201,757 to 341,995. That is approximately 0·11 cars per person and 0·32 cars per family. The County of London is of course only a small part of the whole built-up area. It covers an area of 118 square miles, whereas the London Traffic Area, with which my Committee has to deal, covers 1,820 square miles. It is as well to remember that the total number of vehicles on the roads of Great Britain is expected to double within the next ten years. But an inevitable result is an extremely high demand for the use of London's existing road space.

### Long-Term Parkers Use Up Roads

The 30,000 long-term parkers in Central London use up about 100 miles of kerbside space which should be available for flow of traffic, and for commercial vehicles loading and unloading. All this unofficial garage space in the streets has been available without cost to the parker, despite the immense disadvantages it caused to legitimate users of the highway. If the long-term parkers had been charged for the privilege of abusing the highway, their subscriptions could have gone some way towards covering the cost of off-street garage space for every one of them.

In the light of this growing problem it was recommended by the Traffic Advisory Committee, and subsequently decided by the Government, that the essential first element in the relief of traffic congestion in Central London was to restore the streets as nearly as possible to their proper use by a strict control over street parking. Parking on the streets should be authorised only in those places where it would have no serious ill-effect on moving traffic or on access to premises. Where parking could be allowed, first priority should be given to the short-term user, firstly because we thought that he had the greater need to be near his place of call and secondly because, with short-time limits, more people could make use of each space during the day. The average traffic speed in the first of the controlled parking zones increased by 9 per cent, and there was also some reduction in the accident rate.

*(To be continued)*

*Abstract of paper read before the Royal Society of Arts.

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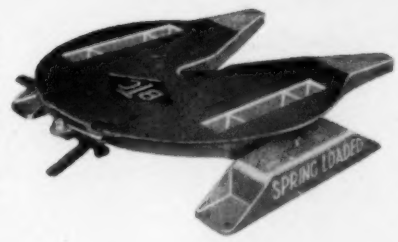


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***LORRY—BUS—COACH***

# *Faster Clydeside Turnround?*

THERE are prospects of improved turnround for road vehicles using the port of Glasgow, following an agreement just reached between the employers and the union concerned. Hauliers using the port have repeatedly complained, as elsewhere, that their vehicles are seriously delayed, that ships are missed and that dock operation has become increasingly uneconomic in this area, because of restrictive practices applying in cargo handling. Now the Scottish Transport and General Workers' Union and the Dock Employers' Association have agreed, through a Dock Labour Joint Committee, that any mechanical handling system or item will receive fair consideration and that no unreasonable ban will be applied. This means that employers may now plan mechanical handling systems, install a wide range of handling units, including fork-lift trucks, and generally plan on a mechanical rather than on a manual basis. A Joint Cargo Handling Survey Committee has been established as a continuing body, to examine all proposals, give approval and recommend piecework rates.

The intention is that the savings from mechanical handling should be spread between the customer, the cargo handler and the dock employee. It will be the duty of the new committee to examine all such plans and to see that the benefits are fairly spread. An example is export whisky, which is at present carried in single cases, because of refusal by dockers in the past to handle bulk loads. Now, assuming that this agreement is fully operated, whisky will be exported in 32-case unit loads, with fork-lift and other systems as the rule rather than the exception. Operators are now seeking to adjust their own operations in line with this new agreement.

### *Date for Haulage Wage Increases*

HIGHER wage rates for road haulage workers come into effect from December 19. This is provided for in road haulage wages order RH(70), published this week. The increases in rates of pay were outlined in our October 8 issue.

### *Propane to the Rescue*

WHILE town gas supplies to a biscuit factory at Cinderford, Glos, are disrupted due to the collapse of the railway bridge across the Severn road tankers are keeping the factory going with propane gas, stored in temporary tanks installed at the factory. The railway bridge carried a public gas main.

### *Evidence of Pirate Minibuses*

MUNICIPAL operators in the North-West, concerned at the growing activities of motorists and owners of minibuses and vans, have appealed to the North Western Area Traffic Commissioners to help them in their fight against pirate operation. Alderman W. Walsh, chairman of Bolton Transport Committee, says: "We have evidence that when one Bolton factory is on overtime, the Corporation takes home in its special buses 150 to 180 more people in the evening than it has carried in the morning. We believe this is because the owners of some of the vehicles used in the morning have finished work at the normal time, leaving their customers without transport. All municipal bus undertakings are losing passengers to the 'pirates' and we think the time has come to warn future offenders that they risk prosecution."

### *Paying for a Bus Station*

WHETHER and how far the total council outlays, for both capital and maintenance purposes, on a bus station and car park should be determined, firstly as attributable to the bus station proper and, in the light of that determination, secondly, as recoverable from bus operators; these were the main issues in an appeal concerning George Street bus station, Hyde, which the Minister of Transport has just determined. It was urged by the representative of the main objectors that the proportion of the capital charges attributable to the Charles Street approach and the area for out-of-service vehicles as well as to the car park proper should be excluded, but the Minister finds no sufficient ground for such a course. In his view a proportion, say three-quarters, of the approach costs and of those of the public conveniences is rightly reckonable, and the out-of-service area should be included in view of the definite prospects of further development.

Other major points of difference between Hyde Borough Council and the operators arose over the costs of cleaning the station, lighting and cleaning of the public conveniences, and the charging of sums in respect of general rates. Except that a proportion of the two latter items should be regarded as attributable to the car park, the Minister considers that such items should be debited against the bus station. As regards the administration charge, his view is that such a charge is appropriate but (as in the analogous case of trunk road maintenance) should be based on the relevant maintenance costs and not the capital costs also. Offsetting this reduction of the proposal made by the council, on the other hand, he would be prepared to make some small allowance for extra contingencies in running expenses.

In deciding how far the costs as calculated as attributable to the bus station should in fact be made recoverable from operators, the Minister accepts the view of his inspector that the station represents a considerable amenity value to the borough of Hyde. Balancing the advantages to the borough against those to the bus operators, he concludes that the proper charge to be made to the latter for the use of the station would be 1½d. per bus departure, which should produce nearly £1,600 per annum. No allowance has been made by the council for any income which may be derived from advertising or other activities and no doubt efforts will be made to draw such revenue as is possible. The Minister agrees that the charge might be reviewed after not less than two years if there is any change in the general financial position from that now prevailing or foreseen sufficient to justify such a review.

### *Interchange Bodies Put Forward*

INTERCHANGEABLE bodies, rather than articulation, capable of carrying out all the duties of cranes and fork-lift trucks, were seen as a potentially considerable gain in efficiency for road vehicle operators by Mr. H. Carter, vehicle division manager, Abelson and Co. (Engineers), Limited, at a one-day conference on materials handling in Sheffield. It was organised by the South Yorkshire section of the Institute of Materials Handling, and was attended by more than 100 senior executives from many parts of Britain. Mr. Carter said that interchangeable bodies on road vehicles should be interchangeable with rail vehicles. He visualised the interchange of bodies at halfway points on trunk routes, suggesting that the equipment would be cheaper than articulated vehicles.

### *Provincial Wage Claim Rejected*

ON Monday, the claim by provincial company bus workers for improved wages and conditions arising out of the London bus wage settlement, was rejected on the spot by the employers' side of the National Council for the Omnibus Industry. The unions concerned had asked for a substantial increase in basic rates for all the workers, including skilled maintenance craftsmen, a guaranteed minimum wage, higher overtime pay on Saturdays, extra pay for early and late duties, another three days' annual paid holiday for employees with 10 or more years' continuous service, and other improvements. The parallel claim on municipal undertakings was discussed on Wednesday.

A Thames tanker, from Canvey Island, discharges at the first Total service station, at Bushey Heath, Herts. The van is a Fiat 600. Diesel fuel will be available at many Total stations. Right, Mr. C. G. C. Redman, general manager of Total Oil Products (G.B.), Limited, presents a plaque to Mr. J. Simpson, proprietor of the service station

### *Standing in Municipal Buses*

THE 39 largest municipal transport undertakings report that the practice of permitting standing passengers only during agreed peak hours has not been adopted. Manchester is the exception. There peak-hour only standing was introduced last January. A questionnaire was sent out by Mr. R. C. Moore, general manager of Sheffield Transport Department, arising out of the present dispute on the subject in that city.

### *T.R.T.A. in S.W. London*

A NEW T.R.T.A. area has been formed in Surrey which also takes in members of the southern part of Middlesex. The decision to set up such an area was taken at Kingston-on-Thames at a meeting of members from Surrey and South Middlesex. Mr. H. C. Chandler, vice-chairman of the London and Home Counties Division, presided, supported by Mr. L. S. Pagan, chairman of the divisional membership committee. Mr. R. E. G. Brown, T.R.T.A. London secretary, explained the constitution of the Association.

### *Aberdeen Bus Station Site*

PLANS for a new bus station in Aberdeen to handle out-of-town traffic have now been approved by Aberdeen Town Council Planning Committee. The new station will be located at Guild Street and will not encroach on Station Square since ground at present used as fish trade sidings will become available for the new station. Details remain to be agreed and formal application and approval will be required on presentation of the completed plans. The question of a central bus station in Aberdeen has been active for a considerable number of years, present terminals being located at various points in the city.

### *Loading Bays on Upper Floors*

LOADING or unloading bays on the first and second floors are a feature of the new £5½ million building for Rackhams, Limited (a Harrods subsidiary), in Birmingham. The site is bounded by Corporation Street, Bull Street, Temple Row and Cherry Street. Vehicles enter by a ramp from Temple Row. On the first floor is a yard and platform for the occupiers of the 25 shops which are to be let off by Rackhams to other traders, and also room for 20 cars belonging to office sub-tenants. Rackhams' own deliveries and dispatches are handled on the second floor, where there is a vehicle turntable to avoid reversing.

### *Bus and Coach Developments*

The North Western Road Car Co., Limited, seeks permission to run an express service from Baguley and Northwich to Scarborough.

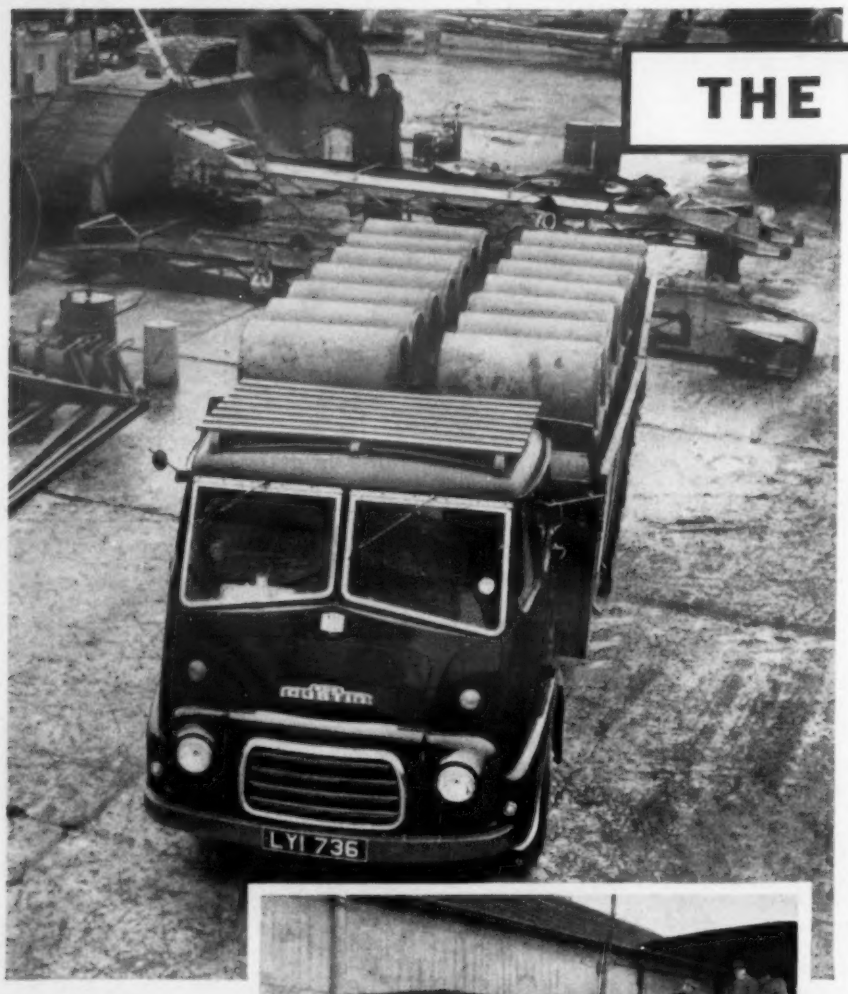
Maidstone and District Motor Services, Limited, proposes a number of service modifications and timetable variations in the Tonbridge area to coincide with the opening of its new garage there.

The Western National Omnibus Co., Limited, has applied for permission to run a Forces leave service from Plymouth to Preston.

L. Tonge, of Lyme Regis, has applied for the licence of J. H. Knight of Leigh.

John Haggerty of the Isle of Barra has requested permission to run a service from North Bay to Castlebay.

Airflow Coaches, Limited, has applied for the licences of Winston Griffiths, who traded as Airflow Coaches, for services in the West Bromwich area.


**Giant machines** await maintenance at Boora, Co. Offaly. Many have been towed there by Austins. Behind them stretch 15,000 black bog acres. A 7 ton Austin takes on 60 pipes, each weighing 2¼ cwt., for delivery to drainage sites.

**At Kilberry** (Co. Kildare) peat moss factory, a 5 ton Austin loads with burlap bales for export. Bord na Mona's peat moss is used for agriculture and poultry all over the world, and noted for consistent quality. 90% of British mushrooms grow on this Irish moss.

## THE IRISH BEAT THEIR BOGS

### Austins help in great national enterprise

**Roughly one-seventh of Ireland is bogland. Black barren wastes, 90% water, that would drown the man who walked on them. For generations the fringes alone have been nibbled for fuel. But today a great new enterprise is beating the bogs and harvesting wealth from the wasteland.**

**Ireland's biggest enterprise**

Bord na Mona (the Peat Board), established in 1946, is now Ireland's biggest national industry. Its achievements in 14 years: 100,000 reclaimed acres, producing over 4 million tons of fuel a year. Employment for over 7,000 people; 2 huge hostels, 8 model villages for workers. 400 miles of railway criss-crossing the bogs. A research station, museum and factories for fuel processing and pipe making.

Bogs take 6 long years to drain and develop before production starts. Over the black expanses, enormous machines lumber, stark against the sky, trenching, cutting, stripping, turning, stacking and loading the soil. The peat is used in homes and factories or fed directly to the 6 power stations sited on the bogs. Another product, peat moss, is exported to world wide markets.

**On the road**

Then there are peat briquettes. For these Bord na Mona started 2 new factories in 1958, importing 60,000 tons of material. Austin 5 tonners, one with Scammell trailer, shift 50-150 tons at a time from Dublin docks, averaging 40,000 miles a year. The Austin Scammell also tows giant machines, many 27 ft. long and 17½ tons in weight.

Austin 5 and 7 tonners transport pipes, labour and peat moss. 3 and 5 ton tippers work on housing sites. 30 Austin vans are used for personnel and servicing and one 4-year-old 10 cwt. is a hard-working refuse collector.

The Board have run Austins for 7 years. Soon 6 new ones will swell the fleet of 67. Shaun Banks, Transport Manager, says: "Austins are doing an excellent job for us. They're very economical, with little mechanical trouble. In 1½ years I haven't had a let down. If I was asked to recommend a truck, I'd say—get an Austin."

**The ½-7 ton Austin range is warranted for 12 months and backed by B.M.C. Service. Bord na Mona's Austins are supplied by Lincoln & Nolan Ltd., Dublin.**

**AUSTIN**

THE AUSTIN MOTOR COMPANY LIMITED
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**Passing Dublin's famous Customs House,** 2 Austin 5 tonners move heavy machinery from the docks to new factory sites. The Transport Manager says: "The material must keep moving—so reliable transport is vital. Our Austins have done exceptional work here."

# NEW PASSENGER TERMINAL

## *At Southampton Docks*

### OPENED BY FIELD-MARSHAL LORD SLIM

AS already recorded in MODERN TRANSPORT, on November 29 a new passenger terminal at Southampton Docks for ships operating on Australian and New Zealand services was opened by Field-Marshal Lord Slim. The new terminal is situated between Nos. 105 and 106 berths in the New Docks and comprises a spacious reception hall, office accommodation, and a covered visitors' balcony. Passengers sailing in two of Britain's newest passenger liners, the P. and O.-Orient Lines 45,000-ton *Canberra* and the 42,500-ton *Oriana* which are to be based at Southampton, will be among the first to use the new facilities. The *Oriana* was berthed alongside the terminal at the opening and sailed on its maiden voyage to Australia on December 3.

#### Reception Hall

The reception hall takes up most of the ground floor of the new building and provides many modern amenities for passengers including a buffet, writing desks, a bureau de change, a railway booking office, book stall and telephones. Comfortable seating is provided throughout the hall. The terminal, which replaces a small lounge provided when the New Docks were opened before the war, has its own railway platform at which London boat trains will arrive and depart.

Interior of the new reception hall

Office accommodation for shipping line representatives, shipping agents' staff, H.M. Customs, Landing and Waterguard staff, is provided on a mezzanine floor facing the quay. The visitors' balcony, which is immediately above the offices, is heated and is provided with seats and refreshment facilities. A public address system operated from the terminal control room can be used for either messages or music, and for calling private cars or taxis from car parks.

The decision of P. and O.-Orient to base the new liners at Southampton will further strengthen the link which already exists between them and the port. The P. and O. connection dates back to 1840; in the mid-19th century the Inner and Outer Docks were used almost exclusively for its trade with the Far East; P. and O. concentrated on Tilbury, however, after 1880. The Orient Line has used Southampton regularly for nearly 40 years.

#### Developments at Southampton

The opening of the new terminal is a further important stage in the postwar reconstruction of Southampton Docks. Since completion of the Ocean Terminal for transatlantic liners in 1950, modernisation of passenger facilities has continued, and in 1956 a new passenger and cargo terminal was provided at 102 berth for liners of the Union-Castle Line trading to and from South Africa. In 1958 new passenger accommodation was completed at No. 31 Shed in the Old Docks and the building opened today brings the total number of reception halls at the port to eight. Reconstruction and development has also provided the docks with a new cold store to replace one destroyed during the war; a new banana shed fitted with the most modern handling devices; and a new transit shed. Another shed is at present being enlarged. Cargo handling equipment has been augmented and includes 54 new quayside cranes.

"Oriana" berthed alongside the new passenger terminal at berths 106 and 107 in Southampton Docks, where reception hall, buffet, office accommodation and covered visitors gallery are provided for liners operating on Australia and New Zealand services

At the opening Lord Slim, who unveiled a placque to commemorate the occasion, was accompanied by Sir Brian Robertson, chairman of the British Transport Commission, Sir Eric Harrison, High Commissioner for Australia, Mr. G. R. Laking, High Commissioner for New Zealand, Sir Robert Letch, chairman of the Board of Management and general manager, British Transport Docks, Mr. S. A. Finnis, chief docks manager, Southampton Docks, Sir Donald Anderson, chairman of the Peninsular and Oriental Steam Navigation Company, and by representatives of Australian State Governments, Southampton civic authorities, and shipping and trading organisations.

#### Welcome

In welcoming the guests at the opening, Sir Brian Robertson, chairman, British Transport Commission, also welcomed Viscount Slim. "Since he left the British Transport Commission in October, 1948, after all too brief a stay as deputy chairman of the Railway Executive," said Sir Brian, "his distinguished career, first as Chief of the Imperial General Staff, and then as Governor-General and Commander-in-Chief of Australia, has been followed with lively interest by railwaymen of all ranks, who had come to respect his experience and ability. He has now returned—perhaps rather like a former scholar who has been asked back to the school to open a new wing—to open for us this new building in Southampton Docks which will be closely associated with our trade links with Australia and New Zealand."

Southampton took pride in itself as an international port. Outside the docks was a sign reading "Gateway to Britain." Southampton backed that claim by dealing with over half of the ocean-going passenger trade of this country. Traffic had been steadily increasing over a period of 70 years, and there had been a record tonnage of shipping in no fewer than six out of the last seven years. The 1959 figure was an all-time record and this year looked like being even better. With such a reputation as Britain's premier passenger port, apart from its large and increasing cargo business, Southampton is very conscious of the welcome its docks give to passengers who land or embark here; from that stemmed the important development schemes carried out in the past decade.

"The decision of the P. and O.-Orient Lines to base the fine new vessels, *Canberra*, the biggest passenger liner to be built in Britain since the war, and *Oriana*, at this port, has given Southampton a very great deal of pleasure," continued Sir Brian. "I do assure Sir Donald Anderson, chairman of the P. and O. Steam Navigation Company, also Sir Austin Anderson, a P. and O. director and former chairman of Orient Lines, that their ships will be made very much at home at these docks. In fact, of course, a shipping company uses a particular port because of both its geographical suitability and its efficiency and speed in ship-handling, and we are quite content at Southampton to be judged on that basis."

#### Avoiding a Cool Reception

In unveiling the commemorative plaque, Lord Slim described the reception hall as a link in the chain between this country and Australia—that vital and exciting country—and New Zealand, and paid a tribute to the services of P. and O.-Orient Lines. The reception hall would put an end to the cold wet welcome of the open quay and cold dark shed to which all too often one went from the comfort of a ship; through it, the visitor's first impression of this country would be good. British Transport docks had been continuously and markedly modernised under the leadership of Sir Brian Robertson despite often difficult circumstances. Those who worked there would find satisfaction in doing a job for their undertaking and for their country.

At a subsequent luncheon given by P. and O.-Orient Lines on board *Oriana*, Sir Donald Anderson, chairman, welcomed the guests and whimsically hoped that Oriana would be welcomed by the older inhabitants of Southampton, from the Queens with their impeccable manners downwards, on arrival in this Cheltenham of the shipping world. So far as the B.T.C. was concerned they had no fears whatever and he warmly praised Sir Robert Letch and the Commission for courage, initiative and imagination.

#### Design and Construction

The new building was designed and constructed under the supervision of the chief docks engineer, Mr. J. H. Jellett, O.B.E., M.I.C.E., with Mr. D. J. Doughty, M.I.C.E., assistant chief docks engineer, in charge of the contract work. Mr. C. B. Dromgoole, F.R.I.B.A., was the architect. The decoration of the building, which has frontage of 196 ft. and a depth of 102 ft., was undertaken by Heals. The walls are faced in Siamese teak, p.v.c., and precast panels, while the buffet is faced in selected Rio rosewood veneers. The general lighting scheme consists of 27 modular lighting units

(*Continued on page* 18)

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GRIP... DURABILITY... ECONOMY...
AND UP TO 20% EXTRA MILEAGE

Fantastic strength and toughness, immense wear-resistance, surpassing grip—that's what Dunlop have built into these new Giant nylon tyres. Just look at the rugged non-ribbed tread of the RK8 with its powerful interlocking segments. Never before has a tyre offered such positive, biting grip on loose surfaces, yet the pattern is close enough and stable enough to give long mileage and traction on normal roads. This is an ideal *rear* tyre for heavy trucks operating on and off the road.
The RK9 is no less impressive. Here is a complementary extra-depth pattern of three rib design to give exceptionally long mileage with very high resistance to irregular wear. Note the broken studded shoulder which gives powerful traction on soft ground.
The RK9 tyre is entirely suitable for front and rear fitment on all trucks. For heavy vehicles when operating on and off the road an ideal balance for grip and mileage is the RK9 tyre on the front wheels and RK8 on the rear wheels.

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# BOOK NOTICES

## *Trade and Technical*

SHIPS OF SOUTHAMPTON AND THE SOLENT. By Laurence Dunn. (Southampton: Adlard Coles, Limited, 7 Brunswick Place, Price 2s. 6d.) This pleasing 36-page booklet has coloured diagrams of funnel colours for recognition of ownership and 64 illustrations of ships using the port or engaged in port service. Details are given of a very large number of ships from liners to coasters and also of shipowners.

* * *

THE MOTORISTS' WEEKEND BOOK. (London: B. T. Batsford, Limited, 4 Fitzhardinge Street, Portman Square, W.1. Price 25s. net.) Sensitive selection and expert presentation by the editors, Michael Frostick and Anthony Harding, have resulted in this unique collection of tales, articles, quotations and pictures of motors, motorists and motoring. Contributions from many well-known motoring writers and photographers and extracts from some of the books and journals of the past have been combined to form a miscellany rather than an anthology, offering something literally for every taste or mood.

* * *

THE HAY RAILWAY. By C. R. Clinker. (Devon: David and Charles (Publishers), Limited, 39 Strand, Dawlish. Price 10s.) Based on original records lent to the author, this account of the 12th railway to be incorporated by Act of Parliament is a valuable addition to historical studies. Intimate details of the financial methods, committee room activities (including forgetting to pay for the drinks) and control of contractors have survived from this early 19th century venture and are given life and perspective by Charles Clinker, whose erudite and fascinating lectures and other contributions on railway history are widely known. The author has brought together 14 attractive halftone illustrations, including the surviving Afon Llynfi bridge and the plate rails found on the wharf at Glasbury in 1935, and there is an admirably clear map. Nevertheless, the book is distracting to read. The previous historian of the Hay Railway, the late Captain F. Ellison, gave no sources of the information he put on record and thus it is difficult to verify or amplify his facts; the present work has 240 footnotes in 41 pages and if this was not going to the other extreme to the point of unreadability, the printer has made sure of it by publishing the footnote numbers in the same size of type as the text. Books are intended for reading as well as reference and this should always, we venture to suggest, be uppermost in the mind of the publisher of even the most learned work.

* * *

THE A.B.C. OF TRAMWAYS—Amusing, Beautiful, Curious. By B. Willemsen. (Netherlands: International Photographic Exchange Bureau, Grutstraat 34, Doetinchem.) A looseleaf album of a score of different tramcar illustrations with brief particulars of construction, seating and dimensions. Places selected range from Aachen and Amsterdam to Kiev in Russia, Nagoya in Japan to Turin, Ulm and Vienna, in Italy, Germany and Austria respectively.

* * *

ROADS AND THEIR TRAFFIC. (London: Blackie and Son, Limited, 16-18 William IV Street, W.C.2. Price 35s. net.) A collection of articles by 13 contributors, all distinguished in their respective fields, edited by Ernest Davies, Assoc. Inst. T., providing an introduction to the relatively new science or art of traffic engineering. Subject matter ranges from the planning, design and construction of motorways, through traffic control, road signs and marking, parking and road and traffic research to administration and road safety, while some of the more notable constructions of the recent past are described and illustrated.

* * *

THE RAILWAYMAN'S DIESEL MANUAL. By W. F. Bolton, A.M.I.Loco.E., M.S.A.E. (London: G. H. Lake and Co., Limited, 283 Archway Road, N.6. Price 12s. 6d.) No branch of engineering technology stands still, but in its scope and speed of execution the switch from steam to diesel power on British Railways has probably demanded of its operatives a greater and more rapid change in basic skills and knowledge than most engineering advances. Mr. Bolton's excellent book first made its timely appearance in 1956 and successive impressions have helped many railwaymen to gain understanding of their new equipment. This, the third edition, which has been brought up to date and considerably enlarged, will carry them farther along the road and keep them abreast of development. New matter, all adequately illustrated, includes descriptions of the latest types of engines and transmissions and braking and cooling systems.

* * *

RAILWAY PROGRESS, 1909-1959. (London: Stephenson Locomotive Society, 32 Russell Road, W.14. Price 10s. 6d.) Intended to act as an index from which the reader can get the time of particular developments and follow them from the Society's *Journal* or the technical press, this account of railway progress views progress entirely from the angle of motive power. As such its 138 pages are of extreme interest and a well-selected group of photographs has been used for illustration.

* * *

FIFTY YEARS OF MOTORING. By Dudley Noble. (London: The British School of Motoring, Limited, 102 Sydney Street, S.W.3. Price 7s. 6d.) A motorist himself for 50 years, Mr. Noble presents an interesting account of the changing scene in the world of roads and road transport from 1910 to the present, with a series of illustrations of motor cars showing their progressive development over that period. Into the main theme, the story of the founding in 1910 by the late Mr. S. H. C. Roberts of the British School of Motoring and its great contribution to the art of driving is unobtrusively woven. A valuable appendix of 30 hints on better driving is contributed by F. R. Priestley, B.S.M. chief instructor.

* * *

THE REDRUTH AND CHASEWATER RAILWAY, 1824-1915. By D. B. Barton. (Cornwall: Truro Bookshop, 18 Frances Street, Truro. Price 6s. 6d. or 6s. 11d. by post.) Intimately concerned with the rise of tin and copper mining in Cornwall was the development of transport facilities. The ore was moved for smelting on the coalfields because 18 tons of coal were required to produce a ton of copper. Moreover, while pack animals could cope with the tin output, the production of copper ore far outstripped the volume of tin. Further, the mines needed pumping by steam and so coal did have to be taken into Cornwall. The plateway to the port of Portreath was opened in 1809 and when in 1819 the Consolidated Mines group was taken over by John Taylor and Sons of London, the Redruth and Chasewater Railway was the result. Its ceremonial opening—the first railway in Cornwall—with animal traction was on January 30, 1826. Steam took over in 1854 and as the gauge was 4 ft. there was never any connection with other railways. The author tells an interesting story of primitive railway operation and has produced some delightful pictures of the steam days. Maps reproduced from large-scale sheets are not very helpful to the reader, although picturesque.

* * *

THE TRAMWAYS OF HUDDERSFIELD. By Roy Brook. (Huddersfield: The Advertiser Press, Limited.) The author has made an admirable job of putting on record the story of the first tramway system in this country to be both owned and operated by a municipality. The story runs from 1883 until the last electric car ran on June 29, 1940, and it is well detailed and illustrated except, alas, for the maps which require a stronger line for the reduction given them.

* * *

CARS OF THE CONNOISSEUR. By J. R. Buckley. (London: B. T. Batsford, Limited, 4 Fitzhardinge Street, Portman Square, W.1. Price 30s. net.) The attainment of excellence in any activity attracts admiration and acclaim but in few fields of human endeavour has its achievement roused such devotion as has been and still is accorded to those few rare breeds of motor car designed and built in the classic tradition during the second and third decades of the century. Just what it was in a particular make or model that raised it above its contemporaries to make such potent appeal is not easy to define; we should be grateful to Colonel Buckley for putting on record a wealth of interesting notes on performance and handling gained mainly from personal experience of the vehicles he considers qualify as cars of the connoisseur. A very readable and well-illustrated book, the value of which is enhanced by historic notes on the companies and specifications of the cars concerned.

* * *

DIRECTORY OF RAILWAY OFFICIALS AND YEAR BOOK, 1960-61. (London: Tothill Press, Limited, 33 Tothill Street, S.W.1. Price 60s.) This invaluable annual reference book is now in its 66th year of publication; it retains its youth, nevertheless, with a modernised set of facts to match the rejuvenation going on throughout the world's railway systems. There are extensions of electric and diesel traction to record and the construction of new railways in countries where expanding populations and higher standards of living exert constantly increasing demands on transport. On the other hand pruning continues in countries with a long railway history. The format remains unchanged, with the handy finger index for British Transport, World Railways, Locomotives and Rolling Stock, Signalling, Electrified Railways, Statistics and Miscellaneous and Indexes. The present issue represents a compromise between the usual date and the unavoidably late appearance of last year's volume; the next edition it is hoped to publish in July, 1961.

* * *

THE HISTORIC LOCOMOTIVE POCKET BOOK. By H. C. Casserley. (London: B. T. Batsford, Limited. Price 8s. 6d.) "From *The Rocket* to the end of steam," says the subtitle, but in fact Mr. Casserley starts off this handy reference book by dealing with *Locomotion*, Stephenson's 1825 machine for the Stockton and Darlington Railway. In 256 pages (including a useful index) the author has made an admirable selection of a very large number of types built between 1825 and *Evening Star* in 1960, giving not only classes of outstanding importance in the history of design but engines of great interest such as the long-lived Beyer, Peacock 0-4-2 saddle tank, built for the Cannock Chase and Wolverhampton Railway from 1856 to 1872, one of which was in existence for just a century; 74 years after the delivery of the first the company built a practically identical engine. Byways of design also covered include the North London crane tank, the George England and Fairlie locomotives for the Festiniog, *Aerolite*, the N.E.R. 2-2-4 inspection engine, and the 0-3-0 class of the Listowel and Ballybunion Railway, built on the Lartigue monorail system. Besides the freaks most of the orthodox engines from Ireland and Great Britain that one would expect to find are recorded.

* * *

AUF DEN SCHIENEN DER ERDE. (A History of the World's Railways.) By Erwin Berghaus. (Munich: Süddeutscher Verlag; 368 pages, illustrated. Price DM.24,80.) Early in August, 1835, Johannes Scharrer, the man responsible for Germany's first railway, became a little impatient. Four months before he had ordered a locomotive from George Stephenson in Newcastle hoping that the *Adler*, thus named in advance, would be delivered in time for the birthday celebrations of King Ludwig I of Bavaria. Now that day was drawing near and the engine had not even left the factory. On the King's birthday, August 27, Scharrer was advised by Stephenson that the shipment, consisting of 19 separate items and accompanied by Mr. William Wilson, who was to become the most important man on the "Ludwigsbahn," was on the way to Germany. The Odyssey of the *Adler's* journey to Nuremberg, where it was fully assembled prior to the now much-delayed opening trip on December 7, 1835, is one of the episodes excellently told in the new book by Erwin Berghaus. Its contents are presented in a style which will appeal more to the wide circle of general readership than to the serious student of railways who cannot, however, fail to be captivated by the author's intriguing approach to familiar events which have been told so many times before. Within the limited compass of 368 pages Erwin Berghaus has managed remarkably well to reveal a fascinating panorama, both historical and topical. After describing the triumph and trials of the iron horse in five continents, Berghaus goes into more detailed aspects of railway operation by reference to current German practice. It is not a technical book; nevertheless the inconsistencies of spelling and converted dimensions in the section dealing with foreign (i.e. non-German) railways are irritating. Well selected photographs and drawings have been included; the maps would be of greater use if the scale of reproduction had been more generous. Some features of every-day railway practice one looks for in vain; their omission is probably due to the same reason which causes the author to express surprise that ". . . the Metropolitan line (of 1863) is also called a railway!"

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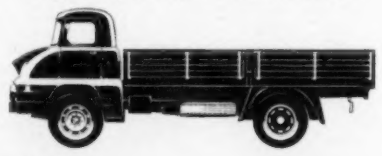

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# A STRIKE AVERTED

## *Remarkable Moves in Canada*

RAILWAYS are deemed by the Government vital to the economic life of Canada; on more than one occasion extraordinary measures have been taken to prevent interruption to railway service through withdrawal of labour or to end a strike if it has taken place. The recent threat of 110,000 non-operating employees to strike for a pay award would have involved the loss of work to 60,000 operating railwaymen and there would have followed, of course, a considerable slowing down of the distributive trades and of industry, with the result that 400,000 would have been unemployed. It was stopped by Act of Parliament, a somewhat drastic but apparently effective method.

The deadlock in railway wages negotiations may be presumed to stem from the inability of the railway undertakings to pay more owing to the restrictions on charging enforced by the Government, especially in respect of rates on grain traffic, to which attention has previously been devoted in MODERN TRANSPORT. A Royal Commission on Transportation is sitting in Ottawa to investigate the problems of the railways vis-a-vis other forms of transport and although it was not due to report until the early summer it is now understood that it will report by March. The Government will then consider its recommendations as a matter of urgency.

### Government Intervention

In the belief that the railways would be better able to cope with a wage increase after the report the undertakings have refused to make concessions; until last week the unions refused to stop their strike preparations. After the intervention of the Minister of Labour, Mr. Starr, and the Prime Minister, Mr. Diefenbaker, in a stop-the-strike struggle the Government decided upon a postponement of the strike by Act of Parliament and the "Bill to Provide for the Continuation of the Operations of the Railways" was rushed into an Act in Ottawa between Tuesday and Friday. The Government contention, against Liberal opposition, was that this was preferable to the terrible consequences of a strike in terms of personal suffering and hardships and possible lasting damage to the economy. It was also evident from the debate that in similar circumstances in 1950 a Bill was only introduced at Ottawa after some days of strike action and then it provided for compulsory arbitration. It was agreed in the debate by Mr. Diefenbaker that this Act would not interfere with arbitration or collective bargaining but was merely postponing the event until the background circumstances offered more prospect of success.

The 1960 Act provides that the railways continue to operate the services of Saturday, November 26; that every employee laid off since November 1 in anticipation of the strike shall be reinstated and that every railway union officer should suspend strike notices. From the date of proclamation by the Governor-General the Act is in force until May 15, 1961, but if the companies and unions settled their dispute the emergency legislation would expire on the date of the new agreement. The existing working agreements between companies and the unions are extended meanwhile for the next six months. The Act is not intended in any way to prejudice the bargaining position of companies or men after May 15.

The Prime Minister said before the Bill was brought in that the 14-cent-an-hour wage boost recommended by the conciliation board, with payment demanded by the unions on pain of strike, could be covered in only two possible ways—by subsidy—and the Government thought taxpayers should not be saddled with the cost of that; or by higher rail revenue—and the railways had their rates "frozen" during the Royal Commission investigation so that they could not afford the increase.

After passage of the Act and even before, the railways made haste to remove embargoes on traffic and to resume "business as usual" while the union representatives agreed that the men would obey the law even if, as they freely said, they thought the "law was an ass."

## ROLLS-ROYCE MILESTONE

### 1,000 Civil Aircraft Engined

IT has been announced by Rolls-Royce, Limited, that over 1,000 civil aircraft with Rolls-Royce jet and turbo-prop engines have now been sold. The actual total today is 1,009; 621 of the 1,009 aircraft are British, 192 American, 94 French, 85 Dutch and 17 Canadian. About 1,750 civil aircraft with turbine engines have been sold up to the present in the Western world, and nearly 60 per cent of them have Rolls-Royce engines.

Civil business requires the establishment of a first-class after-sales service organisation, and this has been built up to match the business involved. There are now 319 service engineers stationed in 35 countries to serve the 68 airlines and 76 other operators currently using Rolls-Royce civil engines. In addition to this, there are 24 overhaul shops for its civil engines in 17 different countries.

The Dart powers 680 civil aircraft and it is well known to air travellers everywhere. It has achieved a life between overhauls of 3,000 hours—a figure never before approached by an aero engine. It has proved itself a reliable engine. The Avon jet has been in service now for two years and two months,

1,000 AIRCRAFT ANALYSED

| | | | |
|---|---|---|---|
| *Dart* | Viscount | 424 | |
| | Fairchild F.27 | 89 | |
| | Fokker F.27 | 85 | |
| | Gulfstream | 52 | |
| | Avro 748 | 14 | |
| | Herald | 9 | |
| | AWA Argosy | 7 | |
| | | | 680 |
| *Tyne* | Vanguard | 43 | |
| | CL.44 | 17 | |
| | | | 60 |
| *Avon* | Caravelle | 94 | |
| | Comet | 55 | |
| | | | 149 |
| *Conway* | VC.10 | 35 | |
| | Boeing 707 | 28 | |
| | DC8 | 23 | |
| | Super VC.10 | 10 | |
| | | | 96 |
| *Spey* | D.H. Trident | | 24 |
| | | | 1,009 |

and has proved even more reliable than the Dart. For example during the two years that B.O.A.C. was operating de Havilland Comets in Montreal it did not have to change a single engine or engine unit there.

The Conway was the first by-pass engine to enter airline service, and has been flying on the air routes since March this year. Conways have already been seen at 1,350 hours life. The fourth engine for which Rolls-Royce has civil orders is the Tyne turboprop.

There remains another engine for which the company has civil orders: the by-pass engine known up to now as the RB.163, chosen for the de Havilland Trident. This engine has now been named the Spey.

## FORTHCOMING EVENTS

**December 12.**—P.W.I. H. C. Trissler, "Handling and Maintenance of Long Welded Rails." 222 Marylebone Road, N.W.1. 6.30 p.m.

Inst.T. Henry Spurrier memorial lecture. J. M. A. Smith, "The Impact of the Motor Car on Public Transport." 66 Portland Place, W.1. 5.45 p.m.

Inst.T. (Sheffield). J. Crosland-Taylor, "Necessity is the Mother of Invention." Royal Victoria Hotel, Sheffield. 7.30 p.m.

I.R.T.E. (Scottish). C. R. Noble, "Some Aspects of the Factories Acts in Relation to Road Transport Operation." The Institution of Engineers and Shipbuilders, Elmbank Crescent, Glasgow. 7.30 p.m.

Rly.C. Informal meeting in the club rooms with display of colour transparencies by members. 7 p.m.

**December 13.**—I.R.S.E. (Bristol). Films meeting. Chippenham.

Inst.T. (Yorks). G. H. Hinds, "Electronics and Transport." Griffin Hotel, Boar Lane, Leeds, 1. 6.30 p.m.

**December 14.**—Inst.T. (Southern). W. J. Irons, "Road Haulage and the Traffic Problem." Harbour Board Offices, Southampton. 5.45 p.m.

I.Mech.E. (James Clayton lecture). Dr. D. F. Galloway, "Machine Tool Research, Design and Utilisation." 1 Birdcage Walk, S.W.1. 6 p.m.

L.R.T.L. H. R. Ballment and R. L. Young, "Two Australians in Search of Trams." 153 Drummond Street, N.W.1. 7 p.m.

B.R.E.R.S.R.S. R. E. Sinfield, "How the Other Half Lives; the Southern Region Shipping and Continental Department; its Organisation, Some of its Problems and Some of its More Interesting Sides." Lecture Room, Great Northern House, Kings Cross. 6 p.m.

S.R.L.D.S. W. J. A. Sykes, "Moscow Journey." Chapter House, St. Thomas's Street, S.E.1. 6 p.m.

N.E.C.I.E.S. (Student section). D. R. Patterson, "Welding and Prefabrication in Shipbuilding." Bolbec Hall, Newcast'e upon Tyne. 7 p.m.

I.R.T.E. (Yorks). Centre visit to the brewery of Joshua Tetley and Son, Limited, Leeds, 10. 7 p.m.

I.R.T.E. (Southern). B. W. Millington, "Measurements in Engine Development." Palmeira Hotel, Hove. 7.30 p.m.

I.R.T.E. Chief Inspector J. W. Todd, "Road Safety." Merton Hotel, Merton Road, Bootle, Liverpool, 20. 7.30 p.m.

I.R.S.E. (York). A. F. Wigram, "The Modernisation Plan and its Challenge to the Signal Engineer." Signalling School, Toft Green, York. 5.30 p.m.

F.R.S. J. R. Bates, "Metro-Land." Engineering Centre, Stephenson Place, Birmingham, 2. 7.15 p.m. Exhibition on Metro-Land open from 6 p.m.

**December 15.**—Inst.T. (Northern Ireland). Films. Grosvenor Rooms, Great Victoria Street, Belfast. 6 p.m.

Inst.T. (East Midlands). W. T. Lambden, "Transport Journalism." City Transport Recreation Club, Leicester. 1 p.m.

I.Mech.E. (Nuclear Energy). Discussion, "The Impact of a Three-Fuel Economy." 1 Birdcage Walk, S.W.1. 6 p.m.

Inst.H.E. (North Western). C. G. Day, "American Roads." Chester. 5.45 p.m.

D.E.U.A. "Report on Diesel Engine Working Costs and Performance, 1959-60." Institute of Marine Engineers, 76 Mark Lane, E.C.3. 2.30 p.m.

I.R.T.E. (Met). J. E. Johnson, "Wear and Tear (Part II)." R.S.A., John Adam Street, W.C.2. 6.30 p.m.

I.R.T.E. (Yorks). A. G. Higgins, "The Design and Construction of the Routemaster Bus." Great Northern Hotel, Wellington Street, Leeds. 1. 7.30 p.m.

**December 16.**—Inst.T. (South Wales and Mon.). E. J. Larkin, "The Progress and Development of Work Study in the B.T.C." High Street Station Restaurant, Newport. 6.30 p.m.

Inst.T. (Tees-side). Debate: "That the Provision of Subsidies for Rural Transport is in the Best Interests of the Economy of the Country as a Whole." Cleveland Scientific and Technical Institution, Middlesbrough. 6.30 p.m.

Charles Churchill and Co., Limited, has opened new branch showroom, offices and warehouses in Manchester, bringing improved services in the sale of machine tools, small tools and engineers' supplies to industry in the North of England. The address is 2-12 The Crescent, Salford, 5, Manchester, and the telephone number is Pendleton 1382.

**Panoramic photograph specially taken for "Modern Transport" of the progress on the Hammersmith flyover section of the London—London Airport road improvements at the end of last month**

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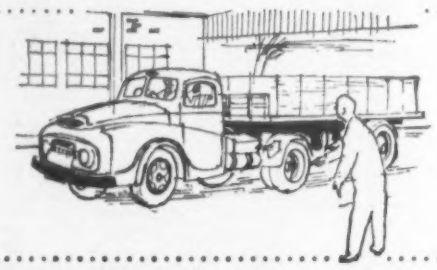

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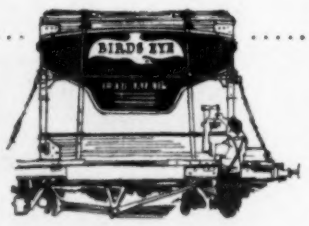
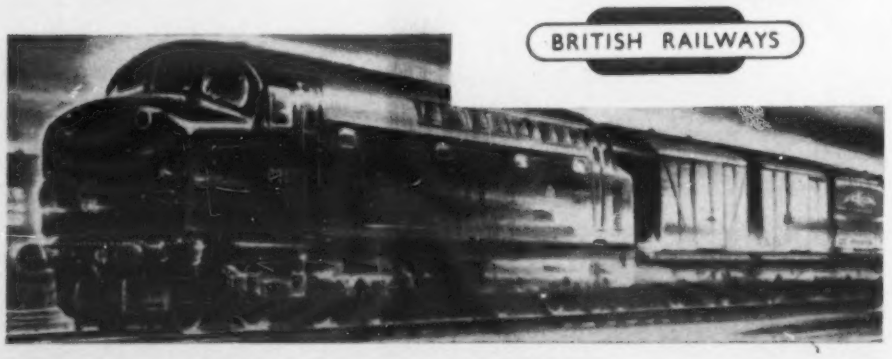



BRITISH RAILWAYS



# SEA LINKS WITH THE CONTINENT

## *26—Services from Hibernian Ports**

TRADE between Ireland and the Continent of Europe has been going on since the days of primitive boats constructed of wattle and hide. The far-flung maritime Viking empire made Dublin an important Scandinavian trading centre and further sea links were developed by the Anglo-Normans and others. It is on record that the origin of the port of Belfast was in 1613 when a charter contained a provision for the establishment of a wharf or quay upon the bay or creek of Belfast. Various improvements were made through the years and in 1847 the Belfast Harbour Act constituting the Belfast Harbour Commissioners was passed.

Likewise the ports of Cork, Galway and Waterford have all had interesting histories and today all the ports in both Northern Ireland and the Republic of Ireland are well equipped to handle all types of seagoing traffic; some idea of the facilities to and from Continental ports are detailed below. These facilities are serving the many new industries being set up in both countries and of particular interest is the growing expansion of Cork where in the new shipyard of the Veroline Cork Dockyard the keel of the first vessel for construction was recently laid, strengthening the association between the Republic of Ireland and the Netherlands.

### Ireland—Scandinavia

Belfast and Dublin both enjoy direct sailings to various ports in the Scandinavian countries, Head Line serving Denmark, Finland and Sweden and Glen and Co., Limited, serving Sweden. The Finland Steamship Co., Limited, is also interested in sailings to and from Finnish ports in conjunction with Head Line services. In Dublin Palgrave Murphy, Limited, acts as Head Line agents for a regular liner service to and from Hangö, Helsinki, Kotka, Mäntylnoto in Finland and to Gelfe, Norrköping, Hemösand and Sundsvall in Sweden. Other Baltic ports are also served as inducement offers. Similar facilities are given from Belfast where G. Heyn and Sons, Limited, Victoria Street, Belfast, acts as loading broker.

Denmark is also connected with Belfast and Dublin by direct Head Line sailings to the port of Copenhagen and the agents named above also act for this service. Typical of the vessels employed are the m.v. *Ballygally Head*, of 959 gross tons, at present on a 14-day schedule of sailings from Dublin to Copenhagen, and the m.v. *Bengore Head* on the Finland run. The Glen and Co., Limited, sailings to and from Göteborg and Belfast and Dublin are operated as part of this shipowner's services from Glasgow and Preston which were described in some detail in MODERN TRANSPORT of January 9. A wide range of Norwegian and Swedish ports is covered in addition to the main ports of Göteborg and goods are taken on through rates to all parts of Sweden, also Oslo, Frederikshaven and Copenhagen. The Dublin agent is George Bell and Co., Limited, whilst in Belfast, D. Dorman and Company acts for the line which operates regularly in conjunction with approximately weekly sailings from Glasgow.

### Ireland—Germany

Bugsier-Reederei-und-Bergungs A.G. of Hamburg have two connections from Bremen and Hamburg to Irish ports in connection with British or Irish shipowners. Services are weekly and that to and from Belfast is jointly operated with Head Line. Pollock Dock, Belfast, is the usual loading berth and G. Heyn and Sons, Limited, act as agents. Typical vessels on recent runs are the m.v. *Suderau*, 1,495 gross tons, German-owned, and m.v. *Ballygally Head*, 959 gross tons, British-owned.

The Dublin services to Bremen and Hamburg, also on a weekly schedule, are operated jointly with Palgrave Murphy (Shipowners), Limited, of Dublin, with its *City of* — ships which also include the port of Cork in their schedule. At Cork Clyde Shipping Co., Limited, Patrick's Quay, acts as agent. Palgrave Murphy (Shipowners), Limited, offers a comprehensive transport and transhipment service which covers the greater part of Europe in connection with the sailings from Irish ports to ports in Belgium, Germany and the Netherlands.

### Ireland—Belgium and the Netherlands

This group of services comprises the most intensive network between Hibernian ports and Continental ports and embraces direct sailings from all parts of the Irish coast. From Belfast, Head Line operates to Antwerp and British and Continental Steamship Co., Limited, to Ghent in Belgium and Terneuzen in Holland. Weekly sailings in conjunction with Glasgow are available and the Dutch motor vessels *Ambulant* and *Maarsbergen* of approximately 500 tons gross have recently been on these runs. Agency arrangements in Belfast are looked after by G. Heyn and Sons, Limited, and also by James Little and Co. (Belfast), Limited, for Ghent and Terneuzen, the usual berth being York Dock. Through rates to interior towns in various parts of Central Europe can be arranged.

The principal ports in the Netherlands are served from Belfast by Holland Steamship Company through Maatschappij Zeevaart N.V. of Rotterdam (Holland—Ireland Line). Once again G. Heyn and Sons, Limited, of Belfast, acts as agent for owners and loadings usually take place in Dufferin Dock, the motor vessels *Theano* and *Trito* of just over 1,000 gross tons being regularly employed on weekly sailings to and from Amsterdam and Rotterdam.

Dublin shipping interests with Continental ports have been closely associated with Palgrave Murphy, Limited, of 17 Eden Quay, Dublin, for many years and the ramifications of this organisation were dealt with in this series of articles in MODERN TRANSPORT of January 12 and April 13, 1957. Today Palgrave Murphy (Shipowners), Limited, operates the Palgrave Line to the Belgian port of Antwerp from Dublin weekly, Cork fortnightly and Waterford as may be arranged. *City of Dublin*, of 1,350 tons deadweight capacity, a modern vessel built to give a speed of 12¼ knots with mechanical ventilation fitted so that such cargoes as livestock and fruit may be carried, is regularly employed on this run.

From Dublin to Amsterdam and Rotterdam, the m.v. *Theano* with refrigerated space available and the m.v. *Trito* operate on the joint N.V. Mij Zeevaart/Palgrave Line weekly service. Cork is also served fortnightly and Waterford according to inducement. Another facility from Dublin to and from Rotterdam, Molukken Rynhaven, is provided by motor vessels weekly from North Wall quay on Fridays, returning from Rotterdam to Dublin on Mondays—full details of this facility can be obtained from R. A. Burke, Limited, of Dublin, which act as agent for owners.

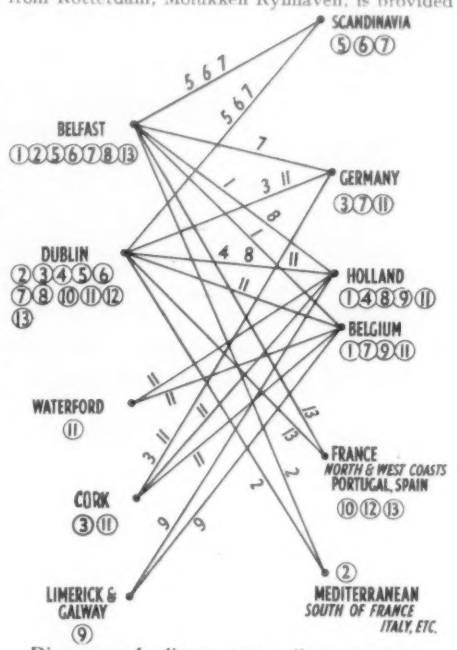



**Diagram of direct cargo liner services between Hibernian ports and the continent of Europe**

Waterford, serving the south-eastern counties of Ireland, has connections with Belgium and Holland by the Palgrave group of services, but calls depend on cargo offering. Clyde Shipping Co., Limited, Customs House Quay, Waterford, should be consulted. The city of Cork has regular connections with Belgium fortnightly, Germany weekly, Holland fortnightly and also with Portugal and Spain when sufficient cargo is offering. Freight arrangements for all these services can be made with Palgrave Murphy, Limited, in Dublin, or with Clyde Shipping Co., Limited, in Cork. Further details of these facilities are mentioned above and below.

The west coast of Ireland also enjoys regular cargo services with the Continent provided by Limerick Steamship Co., Limited, from Galway and Limerick to Antwerp and Rotterdam on a fortnightly basis. This shipowner also serves Ballina and Westport provided there is sufficient inducement, and has offices in Liverpool, London and Rotterdam where inquiries can be made as to freight arrangements to and from the western ports of the Republic of Ireland with its expanding trade.

### France, Iberian Peninsula and Mediterranean

Northern France is connected with Ireland through the port of Rouen served by the network of Worms Compagnie Maritime et Charbonniere which operates a fortnightly service with the m.v. *Valbella* of 425 gross tons or other vessels. In Belfast W. McCalla and Co., Limited, acts as agent for the owners, similar functions being performed in Dublin by British and Irish Steam Packet Co., Limited. Further south Moss Hutchinson Line, Limited, the General Steam associate, serves Bordeaux and Tonnay Charente with regular sailings operated by vessels such as *Crane* and *Redstart* from Dublin. Other vessels of this line and the associated Turner, Edwards and Co., Limited, of Bristol serves Oporto and Lisbon from Dublin approximately monthly, the port of Cork being

(*continued on page* 18)

SHIPOWNERS TRADING BETWEEN IRELAND AND THE CONTINENT

| *Diagram reference* | *Shipowner* | *Irish ports* | *Countries served* |
|---|---|---|---|
| 1 | British and Continental Steamship Co., Limited—apply G. Heyn and Sons, Limited, Belfast, or James Little and Co. (Belfast), Limited | Belfast | Belgium<br>Holland |
| 2 | John Bruce and Co. (Shipping), Limited, 45 Renfield Street, Glasgow, C.2. | Belfast<br>Dub'in | France<br>Italy |
| 3 | Bugsier — Reederei — und — Bergungs A.G. Hamburg, Germany | Cork<br>Dublin | Germany |
| 4 | R. A. Burke, Limited—agent for owners | Dub'in | Holland |
| 5 | The Finland Steamship Co., Limited ("Finska"), Helsinki, Finland | Belfast<br>Dublin | Finland |
| 6 | Glen and Co., Limited, 165 St. Vincent Street, Glasgow, C.2. | Belfast<br>Dublin | Sweden |
| 7 | Head Line, 10 Victoria Street, Belfast | Belfast<br>Dublin | Belgium (Belfast only)<br>Denmark<br>Finland<br>Germany (Belfast only)<br>Sweden |
| 8 | Holland Steamship Company—Maatschappij Zeevaart, N.V. of Rotterdam (The Holland—Ireland Line) | Belfast<br>Dublin | Holland |
| 9 | Limerick Steamship Co., Limited | Galway<br>Limerick | Belgium<br>Holland |
| 10 | Moss Hutchinson Line, Limited | Dublin | France<br>Portugal<br>Spain |
| 11 | Palgrave Murphy (Shipowners), Limited | Cork<br>Dublin<br>Waterford | Belgium<br>Germany<br>Holland |
| 12 | Turner Edwards and Co., Limited | Dublin | Portugal |
| 13 | Worms Compagnie Maritime et Charbonniere | Belfast<br>Dublin | France |

*No. 25 appeared June 4.

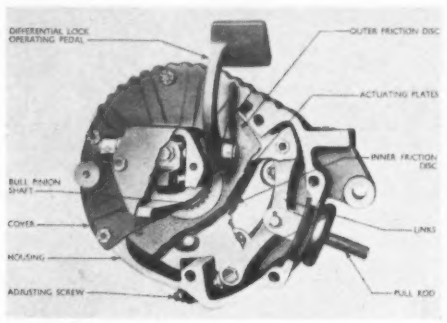
# ROYAL SMITHFIELD

## *Further Advances in World's Most Successful Tractors*

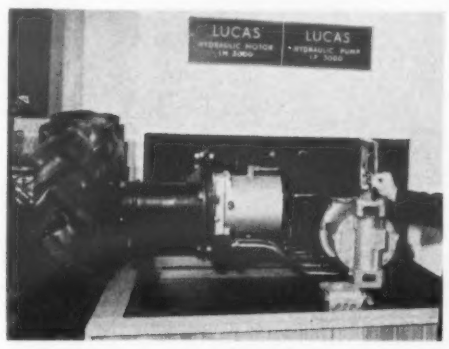
ALTHOUGH the live animals have been sadly missed at the Royal Smithfield Show and Agricultural Machinery Exhibition (Earls Court, December 5-9), dubbed "Royal" this year for the first time, and the opportunity of assessing the innovations of rearranged cattle standings and main show ring has been lost, there has been no diminution of interest in the remaining sections of the exhibition. Indeed, there is every reason for confidence that the many new and improved exhibits in the tractor and machinery sections will have attracted the kind of interest that should consolidate Britain's position as a leading exporter of agricultural engineering products and producer of the most successful tractors in the world.

### Expanding Exports

Despite a setback in sales of farm machinery this year on the home market, manufacturers have increased their sales of tractors and implements abroad and have indicated their faith in the future by capital investments of millions of pounds. Complete export figures for 1960 will not be available for some months, but for the first eight months of the year exports of tractors, implements, spare parts and accessories were all well above those for the comparable period of 1959. The final results are likely to represent a value of about £130 million compared with £105 million in 1959. Of tractors alone, almost as many had been exported during the first nine months of 1960 as in the whole of last year and indications are that once again Britain will have exported more tractors during the year than all the rest of the world's manufacturers put together.




**Detail of the multi-disc brake fitted to the new Fordson Super Major tractor**




**Demonstration rig of Lucas hydrostatic tractor transmission employing 3,000-type units for up to 125 h.p.**

Completely new tractors have been introduced by Allis-Chalmers Great Britain, Limited, Ford Motor Co., Limited, and Massey-Ferguson (United Kingdom), Limited, while most other manufacturers show improved or better-equipped versions of existing machines. The Allis-Chalmers ED40 is a new diesel-engined four-wheel general-purpose machine available in standard and de luxe versions. A four-cylinder diesel engine developing up to 37 h.p. drives through a transmission providing eight forward speeds, from 0.92 to 15 m.p.h. at the governed engine speed of 1,700 r.p.m., and two reverse speeds. Standard equipment includes 547-r.p.m. power take-off, engine-driven hydraulic pump to provide live hydraulics, hydraulic lift and three-point linkage to accommodate standard category 1 and 2 mounted implements and built-in selective weight-transfer mechanism. An auxiliary hand-operated clutch in the mechanical power take-off is an optional extra.

### Tractor Exhaust Brake

Innovations by David Brown Tractors, Limited, include agricultural and industrial versions of a new tractor-mounted front-end loader, mounting respectively a fork and a ¾-cu. yd. bucket. The loader is designed for use with both 850 and 950 Major with 52 usable horsepower in 1958 and has culminated in the Super Major tractor exhibited at the Smithfield. The new machine is powered by the same 52-b.h.p. (net) diesel engine as the Power Major and combines all the advanced features developed over the years for Fordson tractors, including Qualitrol depth control, position control, differential lock, self-energising disc brakes and provision for wheel weights or water ballast. Dual category linkage arranged through interchangeable top-link ends enables the new tractor to work both category 1 and 2 implements. Other new features of the Super Major are stronger front axle, radius-rod pins and wheel spindles, improved seat and seat fixing and a flow control valve in the Qualitrol circuit to provide driver adjustment to suit more exactly varying types of work and working conditions.

Changes made in the specification of the established Fordson Dexta tractor also include the improved seat, a flow control valve in the hydraulics system and new styling to match the Super Major. A new gearbox for the Dexta, providing wider speed range and increased take-off power at the standard 540 r.p.m., was introduced recently. A new version of the Dexta introduced at the show is powered by a four-cylinder petrol engine of 37 b.h.p. at 2,000 r.p.m. The petrol-engined Dexta has a 3½-in. longer wheelbase than the diesel machine and at present is available only for export.

### Fordson Super Service

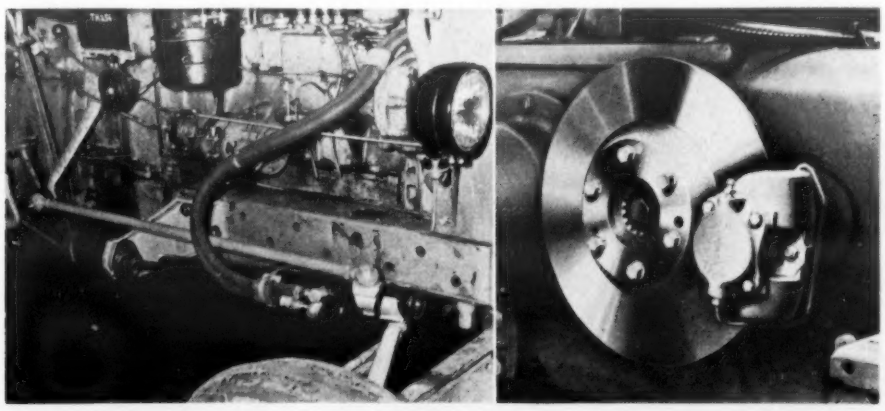
Creation of the Fordson Super class signals the start of a super after-sales service campaign in the United Kingdom. It includes on-the-farm instruction when any new Fordson tractor is delivered, two complete on-the-farm maintenance services, a free comprehensive check before the end of the warranty period and all repair and service work based on factory-devised methods and a schedule of maximum charges. A show announcement by Ford Motor Company revealed that tractor production for the first 11 months of 1960 totalled 66,080, nearly 7 per cent higher than in the corresponding period last year, and that exports during the first 10 months were 18 per cent up. It also said that the supply of tractor power units for British-built earthmoving and industrial equipment would show a 30 per cent increase by the end of the year. Production capacity is being expanded progressively and will be aided by the improved manufacturing facilities to be provided at the new tractor factory at Basildon.

Specially featured on the International Harvester stand at the exhibition is the actual I.H. B275 tractor used by the winner of the World Ploughing Championship in Rome this year. It is shown in company with a BTD8 crawler tractor, B450 standard and Farmall machines, a standard B275 and a new Hi-clear version of the B275 developed for working with particular row crops. International Harvester Company of Great Britain, Limited, is also able to announce a sales increase of 20 per cent over 1959 figures and a turnover during 1960 of over £28 million.

Massey-Ferguson (United Kingdom), Limited, introduces a new version of the MF 65 tractor embodying all the features of the earlier mark but fitted with a new diesel engine of higher power. The four-cylinder engine is a direct-injection type fitted with C.A.V. distributor-type fuel-injection pump. Also newly developed by Massey-Ferguson is a multiple hitch which provides the advantages of Ferguson system weight transference to the rear tractor wheels under difficult conditions with trailed implements and when drawing trailers. An interesting show activity of the company was the chartering of a special train from London Midland Region from Carlisle to Euston on Sunday bringing Cumberland and Westmorland farmers and their families to London for the exhibition and Christmas shopping, with return to Carlisle by special train on Wednesday.

Progressive development of the Nuffield tractor since it first went into production in 1948, while involving no fundamental changes in the original

(*Continued on page* 11)



**Hydraulic steering servo, now an optional extra, fitted to Nuffield Universal Four tractor; right, Dunlop hydraulically operated disc brake in typical position on side of tractor transmission case; a mechanically operated unit is also available**

David Brown Implematic tractors and is claimed to be exceptionally easy to fit and simple to operate through the standard Implematic hydraulic system. The bucket has a maximum lift capacity of 1,700 lb. to a discharge height of just over 10 ft. David Brown has also introduced an exhaust brake, which will shortly be available on 850 and 950 diesel-engined tractors at an additional cost of £10. It can also be fitted to tractors already in service. The unit comprises a spring-loaded clapper-type valve in a housing fitted between exhaust manifold and pipe. It is pedal-operated and its effective use requires the separate closure of the fuel-injection pump rack. Exhaust brake advantages are non-skid and uniform rear-wheel braking and reduction of wear and maintenance of the normal brakes.

David Brown Tractors has been able to report an exceptionally successful year, with tractor deliveries likely to exceed the 1959 figure by more than 40 per cent. Expansion has been almost entirely in export markets, although in contrast to the average national decrease of 16 per cent in tractor sales to the home market, David Brown U.K. sales have equalled the 1959 figure.

Successive development of the Fordson Major tractor introduced in 1951 resulted in the Power

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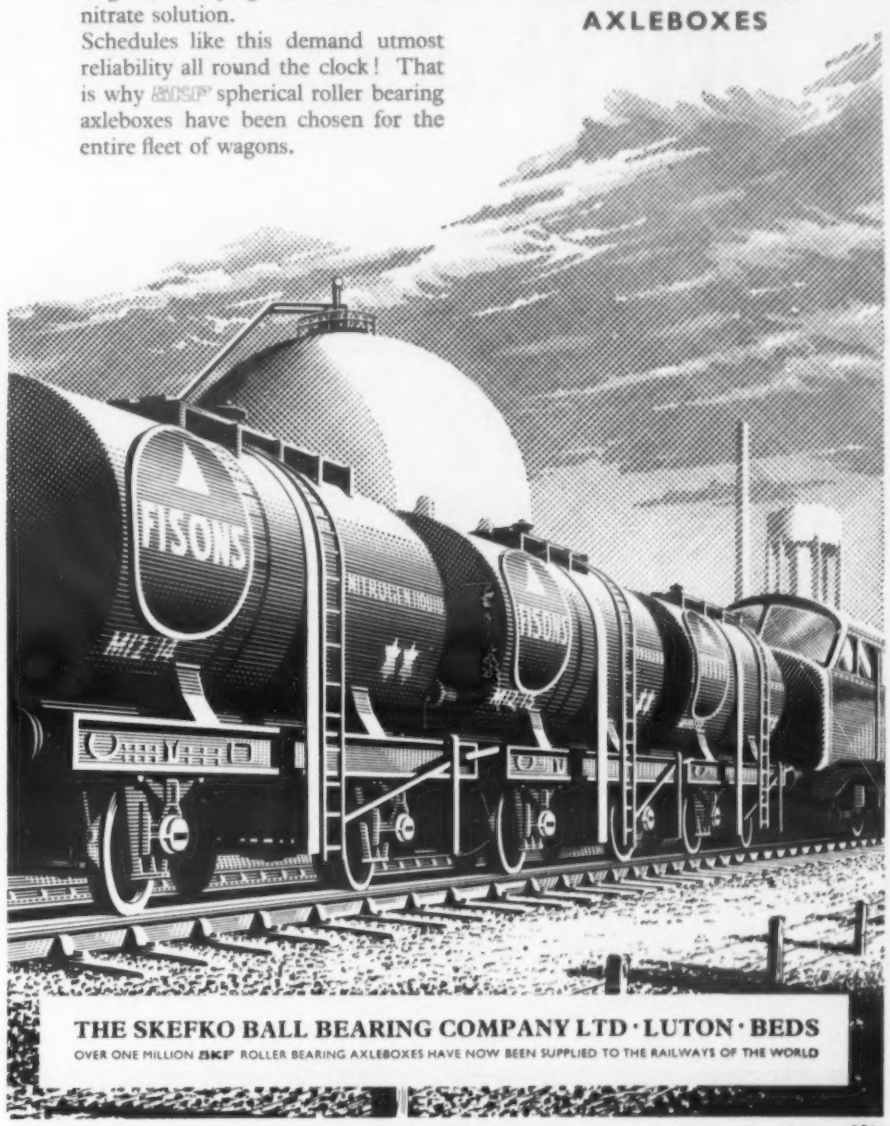


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That's why Albion particularly value the report by Messrs. Hinchcliff, who are part of the multi-fleet Storey organisation.
In fact, although they operate several other makes of trucks, these operators are so satisfied with the performance of the 7-ton Chieftain, fitted with the new Albion 94 h.p. engine, they have now ordered further Chieftain tipper and tractor chassis for their inter-continental services and long wheelbase models for trunk operation.
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# *NEWS FROM ALL QUARTERS*

**End of Preservation Society**

The Sailing Barge Preservation Society, which was formed two years ago, is to close because of lack of support.

**New Exeter Traffic System**

A gyratory traffic system in the centre of Exeter was put into force recently. Four main thoroughfares have been turned into one-way streets in an effort to cure traffic problems.

**Western Avenue Extension Suggested**

New proposals for a Western Avenue extension from Paddington Green to the Edgware Road have been proposed by the Town Planning Committee of the London County Council. The three-mile extension would most probably not be ready until 1967.

**Bradford Exchange Waiting Rooms**

As part of the first stage of a scheme to improve the passenger amenities at Bradford Exchange, work has been started on the general and ladies waiting rooms, both of which are to be redecorated and refurnished.

**Midland Region Closures**

Kenyon Junction and Ellenbrook (for Boothstown) stations on the London Midland Region will be closed from January 2, 1961, for passenger traffic. Passengers will be able to use local bus services.

**Locomotive Works to Close**

It has been announced that the Stockton-on-Tees factory of Metropolitan-Vickers—Beyer, Peacock, Limited, will close next February. There is a possibility of the factory being taken over by another engineering concern.

**Nyasaland Railway Pay Increase**

African workers on the Nyasaland railways have been given wage increases of between 10 and 25 per cent. This increase dates back to November 9. At the same time a council was appointed for negotiations between the railways and the workers and to investigate any grievances.

**Doncaster By-Pass White Elephant**

The West Riding County Council surveyor's department has condemned the new Doncaster by-pass as being out of date before work on it has even begun. Being only two track, traffic congestion is being forecast as extremely probable. The county council has protested to the Ministry of Transport, but the Ministry states that there is not the capital for a three-track express motorway.

**French Motorways for 1961**

Four motorways totalling 161 km. (about 100 miles) are to be built in France in 1961. The road north from Metz to Thionville will be completed, as will the Paris—Nemours route, while new construction will begin from Lyon south towards Valence and from Nice westwards to Fréjus. This compares very favourably with 19 months taken to construct the 70 miles of M1. There are also plans in hand for motorways radiating to Marseilles, Dunkirk via Lille, Tours and Rouen

**Maidstone By-Pass Opening**

The completed Maidstone by-pass A20(M) was opened for traffic on December 3. The motorway has 24-ft. dual carriageways and is the first in Southern England.

**Madrid Underground**

It is expected that construction on an extension of the Madrid underground, from Ventas to Arturo Soria will be commenced shortly. This extension will be about three km. long and will involve the erection of four new stations.

**Pakistan Railway Buys German**

The North-Western Railway of Pakistan has bought 24 diesel railcars and trailers from West Germany, for working on short-distance operations. Lahore will be the base for 16 of these sets and the remaining eight will operate from Khanewal and Samasata.

**The "Midland Pullman"**

From January 2, 1961, the *Midland Pullman* will leave Manchester Central an hour earlier, at 7.45 a.m., and arrive at St. Pancras at 11 a.m. This will enable the service at midday from London to be extended to serve Loughborough and Nottingham.

**More Refreshment Services**

Light refreshments, served from a trolley specially constructed to manoeuvre in the corridors of express trains, will be available on 53 London Midland Region services which are not equipped with restaurant cars. This maintains a service successfully introduced in the summer.

**Bluebell Line Profit**

The Bluebell Railway Line Preservation Society had a credit balance of £1,539 during the past year. Between August and October 15,000 people were carried on the four and a half miles between Sheffield Park and Horsted Keynes. The society now requires a third engine for operating the 1961 summer schedules, which start on April 1.

**Nigerian Railway Commission Report**

The report of the Commission of Inquiry set up to inquire into the Nigerian Railway Corporation was published last week. It recommends that Africans should take over the posts of chairman, general manager, and secretary. The appointments of the general manager and secretary should be subject to an 18-month period of probationary training. The report called for a scheme for rapid advancement of Nigerians in the corporation's service. With a view to their becoming heads of departments in the next three years. The Commission recommended that the corporation's London office be abolished and its functions taken over by the office of the Federal Commissioner in London. The commissioners thought it highly desirable to set up an all-Nigeria transport authority, as far as possible independent of government control. The authority should include representatives of the railway corporation, the more important road transport operators, commercial users of the railway, the Ports Authority and the Nigerian Road Federation, as well as of the Federal and regional governments.

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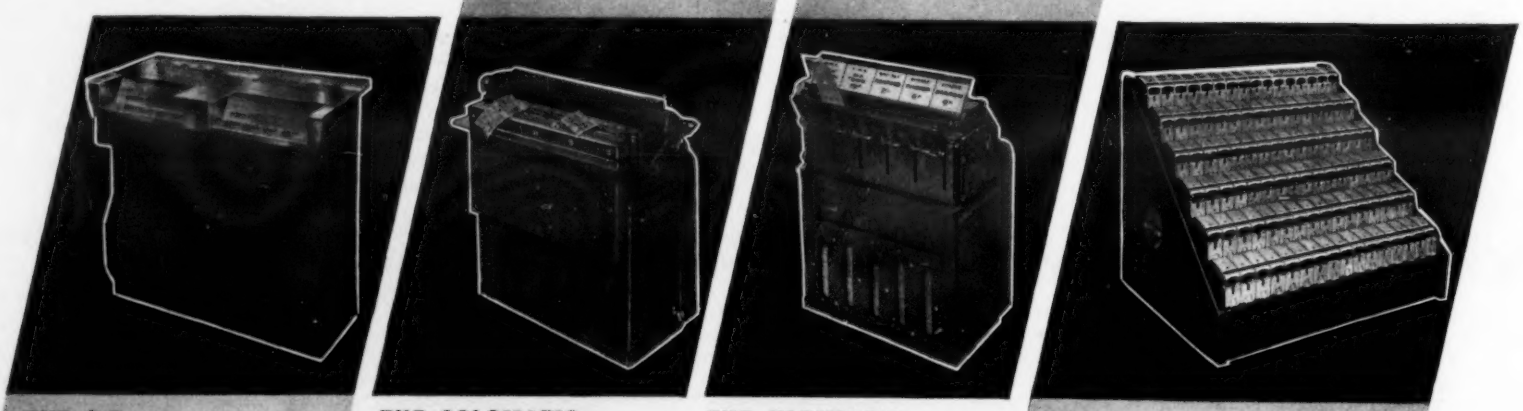

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## COMMERCIAL AVIATION

### C. of A. for Vanguard

#### B.O.A.C. TO SERVE LOS ANGELES

ON December 2 the Vickers Vanguard air liner was awarded a full passenger-carrying Certificate of Airworthiness by the Air Registration Board. The certificate applies to the Type 951 Vanguard as ordered by British European Airways. Certification of the Vanguard 952 for Trans-Canada Air Lines is expected within the next few days. The award marked the completion of an intensive 22 month certification test programme, in which some 1,900 hr. have been flown. Altogether 12 Vanguards have now made over 1,100 flights. Ten of these aircraft are now being prepared for delivery to both B.E.A. and T.C.A. Production of further Vanguards is far advanced. The introduction of the Vanguard was set back approximately six months by the unexpected failure of an engine undergoing bench test at Derby last May. After an intensive investigation the first fully modified Tyne engines became available in September. The Vanguard has accommodation for up to 139 economy-class passengers and its freight holds are the largest of any passenger air liner. The four Rolls-Royce Tynes give the Vanguard a cruising speed of 425 m.p.h.

**Extra Swissair Christmas Flights**

To cater for heavy holiday and winter sports traffic over Christmas and New Year, Swissair is to operate 60 extra flights from Great Britain to Switzerland between December 16 and January 16. Of the extras, 43 will go from London to Zurich, 15 from London to Geneva and two from Manchester to Zurich. Among them will be 22 reduced fare night tourist flights.

**Boeing 727 Confirmed**

With the order of 80 Boeing 727s—40 each of Eastern Air Lines and United Air Lines—production is now certain to commence. With an order of this size, Boeing will be well on the way to making a profit before construction starts. The 727 is the short-range partner to the long-range 707 and medium-haul 720, both of which are now in service. The 727 is a direct competitor of the de Havilland 121. Like the Trident, the Boeing will be a rear-mounted three-jet aircraft. It will carry between 70 and 114 passengers for distances between 150 and 1,500 miles at speeds in excess of 550 m.p.h.

**Glasgow Airport**

Abbotsinch, which is to become Glasgow's airport in place of Renfrew, will be vacated by the Royal Navy in about a year's time instead of three years as was originally expected. B.E.A. expects to move in in roughly three years according to Lord Douglas of Kirtleside, its chairman. The navy is vacating Abbotsinch because of the negligible amount of aircraft movements now done from there —approximately 15 a day. With the earlier move expected B.E.A. will probably be able to operate from Abbotsinch much earlier than was originally anticipated. Meanwhile Renfrewshire planning officials have begun considering road access to Abbotsinch from Glasgow. An official commented that there was "bound to be a change of road." He admitted that one possibility which would be discussed would be using the 6,000 ft. main runway at Renfrew as part of a fast Abbotsinch road.

**B.O.A.C. Increases Boeing Flights**

B.O.A.C. will introduce the fastest jet air service between Los Angeles and London on March 2 when Rolls-Royce powered Boeing 707s begin a direct service between the two cities. The service will operate twice a week in each direction at the start, increasing to three times a week during the peak summer season. On the run from Los Angeles to London the Boeings will cover the 5,443 miles in 11 hr. The London to Los Angeles trip will take 14 hr. because of the prevailing headwinds. This will be the first time that B.O.A.C. has operated to Los Angeles, which with a population of 6,500,000 is the second largest city in the United States and the largest city in the western hemisphere not yet served by B.O.A.C. A weekly B.O.A.C. service to Tehran using Boeing 707s will commence on January 30. This will be a twice-weekly service, stopping at Geneva and Tel Aviv, and will reduce the time at present taken by Britannia services by 3 hr. 50 min.

**British Traffic in August**

During August, 1960, capacity ton miles offered by United Kingdom airlines on their scheduled services increased by 25.3 per cent and total traffic carried rose by 23 per cent; freight ton miles increased by 9.7 per cent and mail ton miles increased by 24.8 per cent. 895,877 passengers were carried, or 23.4 per cent more than in August, 1959, and these passengers travelled 498.8 million passenger miles, or 25.9 per cent more. The overall load factor fell from 64 to 62.9 per cent. During the four-week period ended August 27, 1960, capacity operated on B.O.A.C. scheduled services went up by 28.1 per cent compared with the corresponding period in 1959—capacity on Western routes increased by 47.6 per cent and on Eastern routes by 7.2 per cent. Total traffic carried rose by 34.5 per cent on Western services and by 20.1 per cent on Eastern services. The total of 73,794 passengers carried by B.O.A.C. was 34.3 per cent more than during August, 1959, and these passengers flew 238.4 million passenger miles, or 31.3 per cent more. The overall load factor dropped from 58.1 to 57.7 per cent. B.E.A. offered a total of 20.3 per cent more capacity on scheduled services in August, 1960, than in the previous August; capacity on international services increasing by 19.1 per cent and on domestic services by 23.5 per cent; total traffic carried rose by 18.7 per cent. 268,344 passengers, or 17.6 per cent more, travelled on international routes and 254,768, or 21 per cent more, travelled on domestic routes. These passengers flew 126.7 million passenger miles, or 17.5 per cent more, on international services and 54.3 million passenger miles, or 23.2 per cent more, on domestic services. The overall load factor fell from 70.8 to 69.9 per cent. The private companies operating in association with the corporations provided 24.8 per cent more capacity ton miles on scheduled services in August, 1960, than in August, 1959; international capacity showing an increase of 25.4 per cent and domestic capacity showing an increase of 22.8 per cent. International freight traffic went up by 7.8 per cent, while domestic freight rose by 105.2 per cent. Passengers carried totalled 288,501 or 22.8 per cent more, and these passengers flew 51.5 million passengers miles or 26.6 per cent more. There was an increase of 21.2 per cent in the number of passengers carried on international routes and an increase of 25.2 per cent on domestic routes. The overall load factor fell from 75.2 per cent in August, 1959, to 70.7 per cent in August, 1960.

# IRISH TRANSATLANTIC JET SERVICE

## Mr. J. F. DEMPSEY, B.Com., M.Inst.T.

• • • • • •

**Tuesday of this week saw a flight from Dublin and Shannon to New York of "St. Patrick," the first Boeing 720.048 jet air liner in the fleet of Aer Lingus—Irish International Airlines, with a passenger list including Irish and British civic dignitaries. This precedes the entry into commercial service of the aircraft on December 14. The appearance of the Irish operator on the transatlantic route in its own right—chartered aircraft have maintained the service for more than 2½ years —cannot but bring satisfaction to its general manager, Mr. Jeremiah Francis Dempsey, who graduated at the National University as bachelor of commerce and joined Aer Lingus as secretary-accountant shortly after its formation in 1936; he soon became its secretary and manager. He was appointed secretary of Irish Shipping, Limited, when it was incorporated in 1941, and was later made a director of that company, but with the considerable scope for air transport expansion at the end of the war he relinquished his other posts and was, in 1946, appointed general manager of Aer Rianta and Aer Lingus, the former being the company through which the Eireann Government holds 95 per cent of the Aer Lingus shares (the remainder are held by British European Airways) administers Dublin Airport, and generally furthers the development of air transport. He also became general manager of Aerlinte Eireann when that was established to operate the transatlantic service originally planned for 1947. Mr. Dempsey was appointed a member of Bord Failte Eireann upon its establishment to foster the Irish tourist industry and acted as its director-general pending the making of a substantive appointment. He was also a member of the committee of inquiry into Irish transport presided over by Dr. J. P. Beddy, which reported in May, 1957. When he joined Aer Lingus in 1936 it had one de Havilland Dragon and carried nearly 700 passengers in the first year of operation. Now its annual traffic together with that of the transatlantic service is close on 600,000 passengers and 12,000 tons of mail and freight, and the fleet of seven Vickers Viscount 800s, seven Fokker Friendships, five Douglas DC3s and the Boeing 720 will be joined by two more of the last-named type early next year. Mr. Dempsey, who is a member of the Institute of Chartered Accountants in Ireland and of the Institute of Transport, has played an important part in the development of one of the most successful air transport undertakings to be operated by a small nation.**

## IN PARLIAMENT

### Four-Year B.T.C. Programme

#### C-LICENSED VEHICLE RECORDS

EFFORTS were made by Opposition peers in the House of Lords on Wednesday last week to have published the recommendations of the Stedeford group. LORD MORRISON, in particular, said that the Minister could not justify his own position without revealing the report and recommendations. LORD CHESHAM, Joint Parliamentary Secretary, Ministry of Transport, said the Minister was expecting shortly to receive from the B.T.C. a four-year programme, on the preparation of which the Commission had been urgently engaged for some time. As soon as this had been received the Minister would examine it and discuss its implementation with the Commission in the light of present and future probable needs. He pointed out that witnesses had given evidence to the group on the understanding that it would not be reported.

**No London Transport Inquiry**

MR. ERNEST MARPLES said on Monday that to set up a committee on the present state of London Transport bus services would not contribute at this stage to a solution of the problems.

**C-Licence Vehicle Records**

MR. GRESHAM COOKE asked the Minister of Transport whether he had now considered the proposals put to him by the British Road Federation for substantially reducing the work of record keeping for drivers of small vehicles under C licences; and what reply he had sent to the Federation. MR. E. MARPLES replied that he was still considering these proposals, and had not yet replied to the Federation.

**Flying Boats for Sale**

It was stated by the Minister of Aviation, MR. P. THORNEYCROFT, in the Commons on Monday this week that the three cocooned Princess flying-boats built by Saunders-Roe are to be offered for sale on the open market. MR. J. RANKIN referred to the suggestion that a company might purchase these three aircraft provided it could also purchase a right to routes along with the aircraft. The Minister, in his view, should refuse to entertain such an offer, because it was the business of the Air Licensing Control Board. MR. P. THORNEYCROFT said that there might be some difficulties in a composite contract of that character.

**Dualling of Ripple Road**

MR. J. PARKER asked the Minister of Transport whether he was aware of the traffic blocks which arise at the Chequers Lane-Ripple Road junction, Dagenham, and whether he would give priority to the proposed construction of a larger roundabout there to be part of the new dual carriageway. MR. E. MARPLES said he was aware of the congestion that occurs at this junction. To enlarge the present roundabout adequately would involve extensive demolition of property and he proposed therefore, to replace it by traffic lights. The work was to be carried out as part of the scheme for constructing a second carriageway on Ripple Road which should start next summer. The Chequers Lane-Ripple Road-Heathway intersection handles very heavy traffic, especially at peak hours, to and from Dagenham Dock, Tilbury Docks, and the Ford works.

★

## SMITHFIELD SHOW

(*Continued from page 9*)

highly efficient design, have resulted in the current Universal Three and Universal Four machines shown by Morris Motors, Limited. The whole range of equipment available, which includes hydraulic lift, independent power take-off, tractometer, differential lock, vacuum brake servo, electric lighting and, for the first time this year, hydraulic power-assisted steering, is shown variously on the five tractors on display. Motorised sectioned 3DL and 4DM tractors are also shown, with various sectioned components.

A great deal of thought has been devoted to safety features in Nuffield tractors. Examples are the very heavy gauge material used for the mudwings and the doubly guarded power take-off, comprising an exceptionally strong shield for attachment of implement guards and a cap to fit over the end of the shaft when the take-off is not in use. The power take-off control lever is so positioned as to encourage disengagement before dismounting and similar thoughtfulness has located the differential-lock pedal where it is difficult to engage accidentally. A further feature is a mechanical lock fitted to the hydraulic power unit which eliminates tendency to creep and dangerous release in the event of hydraulic pump failure.

**Hydraulics**

Hydraulic systems of transmitting power for auxiliary drives for most purposes have reached a high state of efficiency and are now employed widely in agricultural and industrial equipment. But despite the extensive development work with hydrostatic main vehicle transmission put in by its two principal commercial proponents, the Dowty and Lucas companies, and others, it still remains to be adopted, even as optional equipment, by any of the principal agricultural tractor manufacturers. That this development will come is practically certain, for although cost of hydrostatic transmission is at present higher than mechanical transmission, its advantages are several and substantial and its cost can be reduced by higher volumes of production.

Among advantages are provision of infinitely variable speed ratio within design limits, with maximum torque available down to the lowest speeds, elimination of all gearing, including the differential, when wheel motors are employed, thus improving mechanical reliability and giving freedom of frame design, and provision of positive braking without wheel-brake equipment. By suitable valving, the hydrostatic drive using wheel motors can be designed to provide such features as separate wheel braking for assisting tight turns, automatic differential action and limited-slip or locking differential effect for use in wheel-spin conditions. The Dowty Dowmatic system, which covers powers of up to 80 h.p., is in increasing production for construction, materials handling and industrial equipment and special production versions for integration into the design of agricultural tractors are planned for 1961. The Lucas range of hydrostatic transmission units covers powers up to 125 h.p.

The Firestone *dual-purpose* All-Traction Heavy Duty Truck tyre gives longer mileage *on* the road and better performance with greater efficiency *off* the road.

Firestone TYRES
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# LEYLAND SERVICE IN EUROPE

## *Danish Repair Facilities*

GREATLY improved facilities for servicing Leyland, Albion and Scammell vehicles in Denmark are provided by a new factory opened at Silkeborg on December 6. Built by Dansk Automobil Byggeri A.S., an associate company of Leyland Motors, Limited, the new factory is not only the most modern of its type in Denmark, but it could serve as a model servicing plant for vehicle operators anywhere.

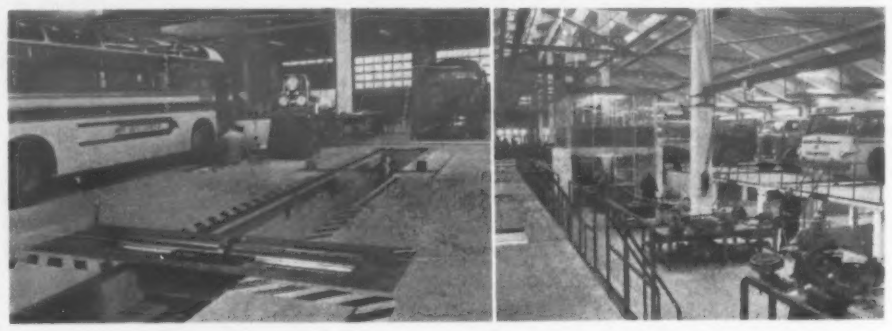
The opening ceremony was performed jointly by Sir Henry Spurrier, chairman and managing director of Leyland Motors, Limited, and Mr. J. Bomholt, Danish Minister of Labour and Social Affairs.

The new factory is evidence of the continued substantial expansion of the Leyland Group's activities in Denmark in association with Dansk Automobil Byggeri, and of Leyland's intention to consolidate its hold on European markets and to provide the same standard of sales and service in the European Free Trade Association as the group provides in the United Kingdom. Leyland's stake in the Danish market is already substantial. More than 90 per cent of the heavy-duty buses sold to Denmark in the past few years have been of this make and the company is the main supplier of vehicles to the Copenhagen municipal passenger transport undertaking.

Not only are the new service facilities the finest of their type in Denmark, and probably the equal of anything in the world, but the bus body manufacturing potential of the Danish company is also being increased in order to cope with the demand for the latest-type Leyland chassis fitted with D.A.B.'s Continental-styled body construction. The first of a new series of Leyland buses incorporating full air suspension, automatic transmission and lightweight plastics bodywork is now in course of construction.

Having a total floor area of 80,000 sq. ft., the new service factory is well situated just outside Silkeborg in the heart of the Jutland peninsula, Denmark's largest single area of land. Intended primarily for the servicing and repair of both goods and passenger vehicles, it is only the first stage of a scheme to move the entire D.A.B. plant out of the centre of Silkeborg to more modern and easily accessible premises. Accommodation for 20 vehicles, most of it with inspection pits, is provided in the 300 ft. long by 110 ft. wide main building. This has a largely unobstructed floor area, the roof being supported by one row of pillars down the centre. Each of the 20 vehicle sections has its own direct entrance from outside.

Equipment includes a roller dynamometer for testing the tractive force of complete vehicles, a roller brake-test machine, and equipment for ensuring the accuracy of steering and headlights. Beneath the building there is a 20,000 sq. ft. basement for storing heavy units and parts. Adjoining, at normal floor level, there is a separate machine shop for engine overhaul and the production of special spare parts. Engines are conveyed to this department from the vehicle sections by means of an overhead electric crane, on which they are carried through a separate room for cleaning.



**Dynamometer test equipment in the new D.A.B. servicing factory and, right, general vehicle repair shop equipped with overhead cranes**

### D.A.B.'s Place in the Group

As well as being the local Leyland Group representative, D.A.B. is also the biggest commercial vehicle bodybuilder in Denmark. Its large varied output includes conventional lorries, road tankers and refrigerated and special heavy-duty vehicles as well as buses and coaches with capacities ranging from 30 to 100 passengers. All the bodies are of metal construction (steel or aluminium), with an increasing number of detail parts being produced in structural plastics. The company recently introduced its own range of plastics cabs and these have been very well received by both operators and drivers.

D.A.B.'s customers embrace nearly every goods and passenger fleet operator in Denmark, some of the largest being Danish State Railways and Copenhagen Municipality. Since 1957 the company has exported large quantities of complete vehicles on Leyland chassis to Poland. Bulgaria is a more recent overseas market and vehicles destined for Turkey are now on the production lines.

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Electric Multiple Unit made by Pressed Steel for British Railways
A1
BRITISH RAILWAYS PHOTOGRAPH

# SWANSEA S.P.D. DEPOT

## *Completion of Nationwide Chain*

### DESIGN ADVANCES OVER TEN YEARS

FORMAL inauguration on Tuesday this week of the Swansea depot of S.P.D., Limited, marked the virtual completion of the programme initiated in 1950 for a nationwide chain of depots for the distribution of Unilever products. The first depot to be opened was that at Stockton-on-Tees; now the chain extends from Inverness to Southampton, from Llandudno to Norwich. All that remains is to concentrate the Plymouth and Falmouth establishments at Bodmin and some minor building work at Welshpool, Kendal and Carlisle. Swansea is the 33rd new depot. The national framework is complete. (The first depot at Stockton was described in our May 5, 1951, issue.)

Introducing Mr. P. A. Macrory, secretary of Unilever, Limited, who was to perform the opening ceremony, Mr. Medwyn Ormerod, chairman of S.P.D., said that the world of consumer goods distribution is changing fast—the organisation of retailing and wholesaling was undergoing something of a revolution. S.P.D. thought that through its depot system it had built for the future—time would show, above all as to how imaginatively they used their unique system.

#### Comparisons with Earlier Depots

Much had changed since the first new depot was opened at Stockton and their ideas about design and operation had certainly progressed. While mechanical warehousing and mechanical handling were then possible, the mechanical loading of delivery vans still seemed a remote hope. It might not be perfect yet but it was here. The enclosed loading area seen at Swansea, the new space-saving reach trucks replacing conventional fork-lift trucks, large cold stores, and many other features were new. Load assembly was done differently; van design had advanced considerably; they had moved through insulation to zero refrigeration for delivery of frozen foods. Indoor office functions had grown beyond recognition. Mr. Macrory endorsed these sentiments. The S.P.D. depot organisation, he said, had continually to adapt itself to the pattern of retail distribution in the United Kingdom, a pattern which today was changing all the time with the growth of the multiple shops, the supermarkets, the self-service stores and the buying groups.

The new depot will house beneath its roof as many as 650 different packs. It will serve a distribution area of 2,600 square miles and a population of some 375,000 people in places bounded by Pentrebont in the north and Brecon and Bridgend in the east. It is situated in Kingsway, on the western side of the main Carmarthen—Swansea road, approximately three miles north-west of the town centre. There is no rail connection to the site.

#### Warehouse Construction

The warehouse is of reinforced concrete column and beam construction, with brick and concrete block infilling walls, and contains an uninterrupted floor space of 1,988 sq. yd. with a minimum headroom of 17 ft. 6 in. The roof is of galvanised steel trussed decking, covered with insulation board and surfaced with mineral felt. Natural ventilation is employed to maintain warehouse temperatures within the range required for the products stored, with inlet louvres placed in the walls at low level and outlet ventilators fitted in the glazing frames at high level. Natural lighting is provided by means of upstanding roof-lights. These lights are double-glazed, the outer sheet, as is usual in S.P.D. depots, being of Calorex glass which absorbs solar heat.

The floor of the warehouse is surfaced with a ½-in. heavy-duty granolithic concrete laid monolithically on a 6-in. reinforced concrete slab. At the north-west side of the warehouse a covered area 163 ft. long by 60 ft. wide is provided for loading and unloading operations and also furnishes garage accommodation for the depot's distribution vehicles.

A battery-charging room fully equipped for the maintenance of the electric trucks is incorporated in the warehouse design at the southern end of the covered yard. Diesel and lubricating oils are dispensed from an island site adjacent to the entrance to the depot. Vehicle maintenance and washing bays are also provided. The office block is situated at the north end of the warehouse and is a reinforced concrete structure designed to allow for future expansion upwards. This is heated by a system of underfloor electric cables.

#### Weekly Tonnage

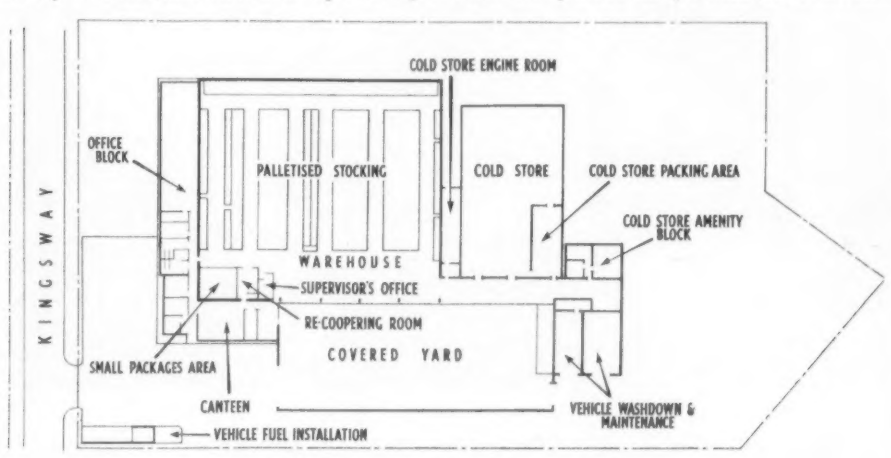
The depot is designed to accommodate approximately 1,300 tons of user companies' stocks and to distribute up to 275 tons per week (2,850 deliveries) or 550 tons handled in and out. A 245-ton Birds Eye cold store, which is designed to give a distributive capacity of 60 tons per week, adjoins the warehouse and faces into the covered area over a 15-ft. wide loading platform. The store is insulated with 8 in. of cork to floor, with 7 in. of polystrene to walls and ceiling. It was built for Birds Eye Foods, Limited, by Smiths Insulations, Limited, and is refrigerated by two 25-h.p. Lightfoot water-cooled compressors with overhead grid coil cooling.

Mechanical handling equipment provided is as follows: one Lansing Bagnall FRER 245 reach truck, with side shift; two Lansing Bagnall POEP 245 power pallet trucks (one modified for cold store working); and two Lansing Bagnall HP 50 hand pallet trucks (one for cold store working). The pallet equipment comprises 2,200 40 in. by 48 in. four-way pallets and 38 Klee-Klamp tubular steel pallet racks for special purposes. Attached to Swansea depot are eight 5-ton general-purpose vans and seven Birds Eye refrigerated vans, all but one of them of 2½ tons capacity.

#### Staffing

The total office personnel is 25; there are 17 truck operators, warehousemen and cold-store staff, and 15 drivers. Birds Eye Foods has nine management and sales people attached to the offices.

The premises have been designed to the requirements of S.P.D. by Messrs. Frederick S. Snow and Partners, consulting engineers, and built by G. Percy Trentham, Limited, the electrical installation being designed by the technical division of Unilever, Limited.




**Layout of the Swansea depot of S.P.D., Limited**

# Articulated Buses for Budapest

### EXPERIMENTAL VEHICLE IN SERVICE

HUNGARY'S first articulated single-deck bus, which is now in experimental service in Budapest, has been developed by combining, through a turntable, two normal Ikarus buses; the unit has an overall length of 46 ft. Apart from removal of the front axle in the bus now forming the trailer, a steering axle has replaced the normal driven rear axle and the trailer wheels are linked to the steering, operating in the opposite sense to the front wheels to avoid trailer cut-in on corners. The passenger load of the experimental vehicle is 34 seated and 64 standing, but at peak hours it will be permitted to carry 160. The bus has three doors, the now-common Continental practice of rear entrance and large platform, from where passengers must pass a seated conductor to reach the forward portion and the two exits, having been adopted.

Plans are in hand to provide 25 more buses of this type by the middle of next year. Then it is expected that large-scale production of specially designed articulated buses will start at the Budapest Ikarus works. The prototype of this new bus is expected to be ready by the middle of next year. With an overall length of 51 ft., it will have peak-period capacity for 190 passengers. Power will be provided by a 180-h.p. six-cylinder horizontal diesel engine mounted under the floor and all three axles will have combined pneumatic and semi-elliptic leaf springing. Bodywork will be of aluminium sheet over metal framing and have similar entrance and exit arrangements.

**Articulated bus for peak loads of 160 passengers in experimental service in Budapest is a combination of two normal Ikarus buses**

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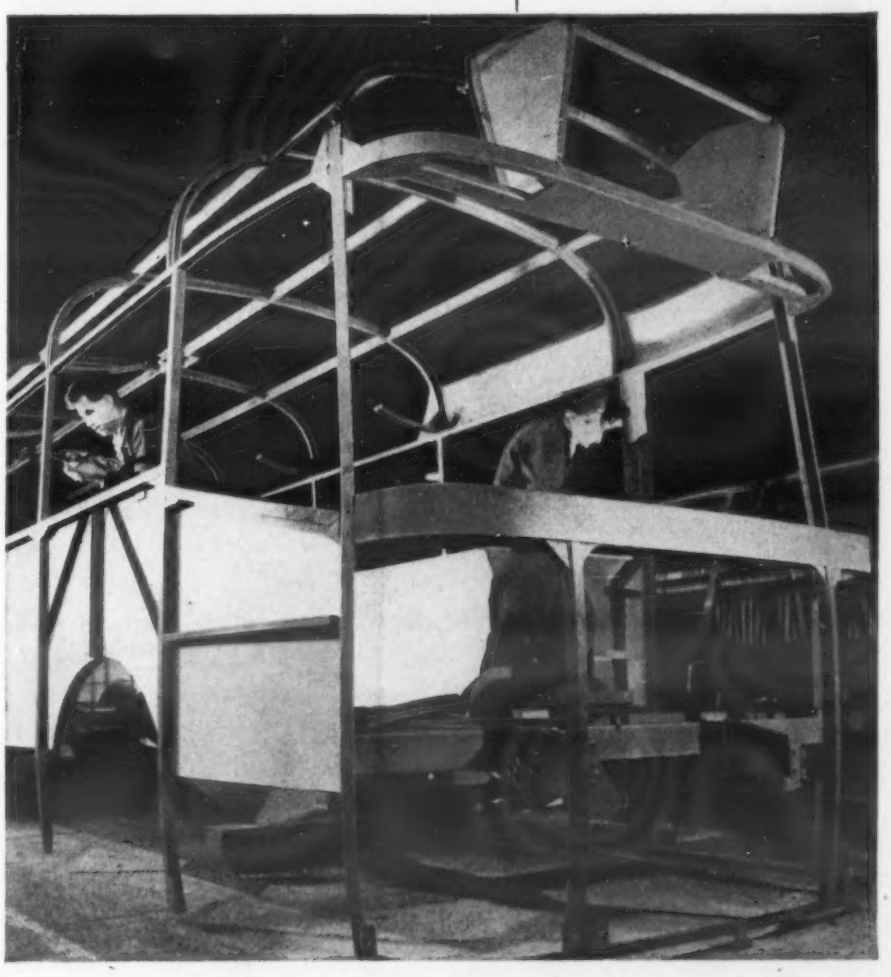


## OFFICIAL NOTICES

### EAST YORKSHIRE MOTOR SERVICES LIMITED

TRAFFIC MANAGER

EAST Yorkshire Motor Services, Limited, which operates some 240 buses and coaches, on stage and express services, excursions and private hire, mainly in the East Riding, invites applications for the position of Traffic Manager which will become vacant early in 1961.

The salary paid will be in accordance with the qualifications and experience of the successful applicant. Knowledge of licensing procedure under the Road Traffic Acts and experience in the control of staff are essential.

Applications giving particulars of age, education, training and experience should be sent, under private cover, to the General Manager of the company at 252 Anlaby Road, Hull, Yorks, so as to reach him not later than December 21, 1960.

### THE NORTHERN GENERAL TRANSPORT CO., LIMITED

ASSISTANT ACCOUNTANT

THE Northern General Transport Co., Limited, which, with five subsidiary companies, operates some 900 omnibuses and coaches in County Durham and on Tyneside, invites applications from qualified accountants for the position of Assistant Accountant at its headquarters in Gateshead.

The commencing salary will be in the region of £1,000 per annum according to the experience and qualifications of the successful applicant. There is a contributory pension scheme.

Applicants should be not younger than 27, possess a recognised accountancy qualification and have had, preferably, two or three years' professional experience. They should have a practical knowledge of company taxation. Previous experience in the passenger road transport industry would be an advantage but it is not essential.

Applications (which will be treated in confidence) should state age, education, family status, present salary, particulars of past and present employments and indicate the earliest date on which the position could be taken up. Write, under private cover, to the General Manager of the company at 117 Queen Street, Gateshead, 8, Co. Durham, by December 20, 1960.

### COUNTY BOROUGH OF WALSALL TRANSPORT DEPARTMENT

TRAFFIC AND ADMINISTRATIVE OFFICER

APPLICATIONS are invited from persons who should be suitably qualified in both Traffic and Administrative work in the Transport Department for the appointment of Traffic and Administrative Officer. Salary A.P.T.4 (£1,140-£1,310).

The appointment is subject to the Local Government Superannuation Acts, and to Medical Examination.

Applications, stating age and experience together with copies of three recent testimonials, must reach me not later than 12 noon on December 29, 1960, and applicants must disclose whether they are related to any member or official of the Council.

R. EDGLEY COX, M.Sc.,
General Manager and Engineer.

St. Paul's Street,
Walsall.

# NEW BUS STATION

## *For United Counties at Bedford*

### FORMAL OPENING BY MAYOR

AS briefly announced in last week's issue of MODERN TRANSPORT, a new bus station at Bedford, built by the United Counties Omnibus Co., Limited, was opened on December 1 by the Mayor, Alderman A. H. Randall. He formally opened the building by cutting a tape across the Gwyn Street entrance at a ceremony attended by aldermen, councillors and chief officers of the borough. Mr. J. S. Gavin, chairman of the United Counties Company, presided, and was accompanied by Mr. Maurice Holmes, chairman of the Tilling Group Management Board, and directors and principal officers of United Counties, including Mr. George Dow (director and Birmingham traffic manager, London Midland Region, B.R.), Mr. J. T. E. Robinson (director and general manager), C. B. Blomfield (chief engineer), and Mr. D. A. Crew (traffic manager).

#### Convenient Situation

The new station, which is conveniently situated in the town centre, is now the terminus for all United Counties country services operating into and out of Bedford, and will be used daily by thousands of passengers. It is within half a mile of the railway station and the bus services have been reorganised so that as many as possible call there to provide connections for people arriving and leaving by train. Improved frequencies and new routes are being provided for the special purpose of giving better facilities, especially on the north and north-east of the town at Putnoe. A multi-storey car park is in course of erection on the north side of the new premises—a useful facility to those making long journeys by public transport. The new station is an integral part of the town's central area development scheme and is connected to the new shopping centre in All Hallows Lane by a covered arcade—an arrangement which should benefit traders as well as shoppers. It is close to fine shops in a precinct on one side and to an area where large blocks of flats are already appearing on the other.

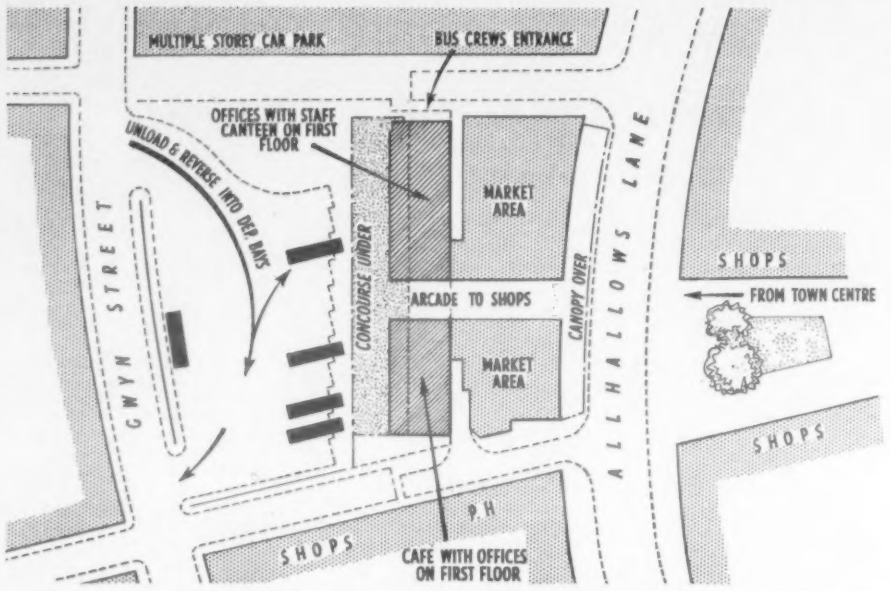
United Counties operates nearly 1,700 stage service departures a week from Bedford, the busiest day being Saturday, when there are 292. Hitherto they have started from the Broadway just off the main A6 trunk road at a much smaller depot built in 1939 by the Eastern National Omnibus Co., Limited, the services of which in Hertfordshire, Bedfordshire and Huntingdonshire were transferred to United Counties management in 1952. The Broadway premises, however, became inadequate and gave no room for expansion. Passengers were obliged to queue outside in the street at peak times, and there was insufficient space to bring all the buses to the stands. There was no parking accommodation for spare vehicles which, consequently, had to be kept at the garage at St. John's, a mile away.

#### Staff Amenities

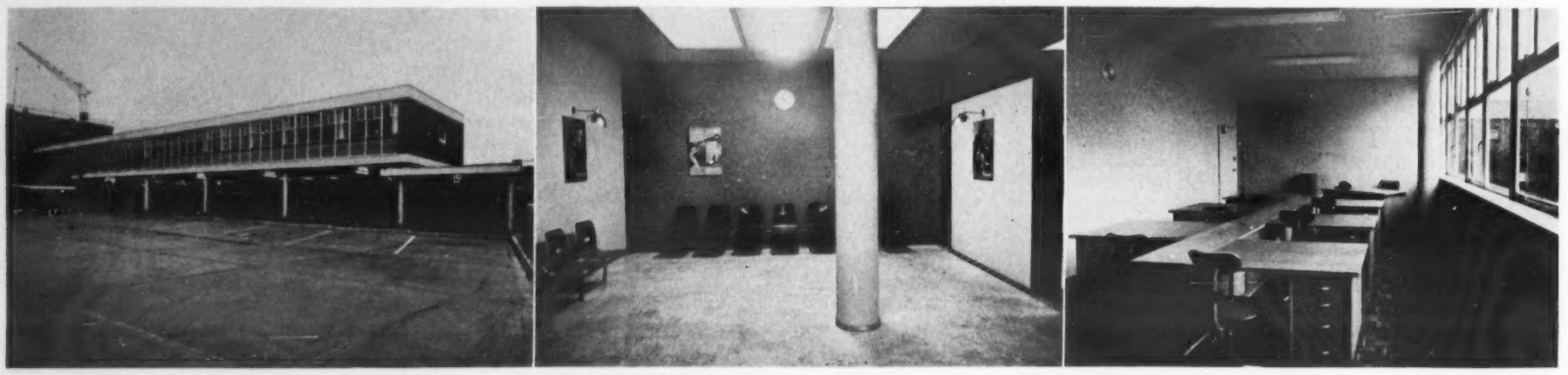
As well as providing improved and more convenient facilities for the public, the new building will give better working conditions for the staff. They enter on the north side and there is a covered cycle park and a coat-drying room immediately available to them, as well as a booking-on room where duty rosters and other notices are displayed.

The site was allocated by the corporation in exchange for the company's land and buildings at the Broadway. It measures 3,560 square yards and is three times larger than the site of the former station. Vehicles enter from Gwyn Street and set down passengers at an unloading platform before proceeding to reverse into one or other of the 12 loading bays alongside the station building. Passengers stand at the heads of the bays under cover or wait in an elegant waiting-room. There is a separate exit for the vehicles into Gwyn Street and parking space for 10 spare vehicles. The building has two storeys and contains an inquiry hall, waiting-room, spacious public cafe (to be operated by a contractor) and parcels office (opening from the inquiry counter) on the ground floor. Above are administrative offices and conductors' paying-in room, together with a staff canteen and kitchen, run by the staff themselves with the latest type of equipment, and a conductresses' rest room. Among tasks carried out in the administrative offices are the compilation of wages figures which then go to headquarters for extension on the mechanised accounting equipment. As already mentioned, the duty roster room, cycle storage and clothes-drying accommodation for the staff are provided below. Wash basins have Bolding Duflo sprays which ensure that hard water does not leave a ring of soap suds after use. The lavatory tanks are grouped outside the lavatory cubicles so that the plumbing can be adjusted from the exterior.

(*Continued on page* 18)




**Excellent layout in a new shopping area distinguishes the United Counties bus station at Bedford, opened at 2.15 p.m. on December 1**



**A general view of the new bus station at Bedford; the passenger waiting-room; and, right, the desk layout in the general office**

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# GLASGOW ELECTRIC

## *Suburban System (Cont.)**

THE overhead line is divided into sections at neutral sections, overlaps, section insulators and insulated knuckles. These sections can be connected by outdoor switches. The switches are mostly hand-operated by a handle rotating a torque rod which in turn rotates the switch blade. Motorised switches are employed at neutral sections and certain remote locations. These are operated from the control station.

### Power Supplies

Power supplies are taken at 25-kV. single phase, 50 cycles, from the Electricity Authority network through duplicate feeders at Parkhead, Dalreoch and Motherwell feeder stations. The switchgear controlling the incoming supplies is similar to that used throughout the electrification and, although owned and maintained by the supply authority, is situated in the railway feeder stations and incorporated in the railway switchboards. To provide an incoming supply in the Airdrie area a sub-feeder station is situated at Coatbridge Sunnyside connected by a 25-kV. oil-filled aluminium conductor cable with Motherwell feeder station. Other sub-feeder stations are located at Finnieston and Westerton; these are connected to Parkhead feeder station by two gas-filled 25-kV. concentric cables.

The two 25-kV. power cables with associated seven-core pilot cable between Parkhead feeder station and Westerton sub-feeder station, looping in and out of Finnieston sub-feeder station, are laid in reinforced concrete troughing. The power cables are of 0.2 sq. in. section and are of the concentric gas-filled lead-sheathed steel-reinforced type. The centre core is the high voltage conductor and the outer conductor the neutral. The core-to-core and core-to-sheath insulation is paper strip pre-impregnated with petroleum jelly.

Gas charging cylinders and control panels are installed at Parkhead feeder station and at Finnieston and Westerton sub-feeder stations. In addition certain straight-through cable joints at approximately 1,500-2,000 yd. intervals are equipped as intermediate gas-charging joints to facilitate gassing and testing. The supervisory cores are 40 lb. per mile and are made up in a joint ownership dry-paper, star-quad, lead-sheathed, armoured and served cable laid in reinforced concrete troughing. The working cores are in one cable and the stand-by cores are in an entirely separate cable. The system is so designed that it can continue to operate in the event of failure of any one supply point, and the 25-kV. sections of the overhead line equipment are capable of carrying the through power required in this eventuality.

### Track Sectioning

The track is sectioned electrically at the feeder stations and sub-feeder stations; separate feeds are taken to the up and down tracks in each direction. In addition 10 track sectioning cabins are situated at intervals along the line. Single-pole, single-phase, oil-circuit breakers controlling the incoming and outgoing supplies at feeder and sub-feeder stations are provided. These are solenoid operated; balanced pilot protection and overload protection is provided on the circuit breakers controlling the power cables, while the oil circuit breakers controlling the tracks are equipped with distance impedance protection. The voltage reference in the latter is obtained by voltage transformers on each switchboard.

The remodelled Queen Street Electric Station is attracting much off-peak traffic: interior of new ticket office at the North Hanover Street entrance and, right, Dundas Court with the attractive ticket office and barriers

At each switching station a 415-volt three-phase supply is taken from the local network for lighting, heating and auxiliary purposes, and in most other cases to afford a signalling supply at 650 volts single-phase through a 415-650-volt single-phase transformer. Because of the vital importance of signalling supplies a 25-kV. to 650-V. or 6.25-kV. to 650-V. voltage-regulated transformer is installed at stations or cabins where a signalling supply is given to provide an alternative supply in the event of a failure of the main supply. The changeover of supply is automatic if a failure occurs. A 110-volt switch-closing battery is installed at each switching station, together with a 50-volt battery for supervisory equipment at all stations and cabins having direct supervisory control. The battery chargers are fed from the local low-voltage network.

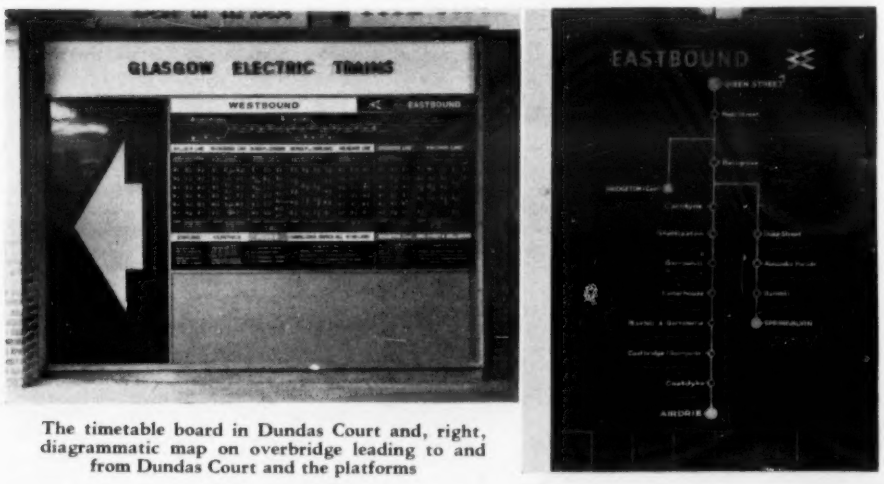
Platform 10—the westbound platform—showing the illuminated train indicator

The electrical control room is at Cathcart—the cheapest centre for cabling. Seated at the control panel, the controller and his assistant have before them a diagram of the complete Airdrie—Helensburgh electrified line, plus the Cathcart Circle and associated lines to be electrified next year. There are 33 sections, the maximum distance between each being four miles, and ample telephone communication is provided with each. Electricity is taken from the grid at 132,000 volts and is stepped down to 25,000 or 6,250 volts. Should there be a power failure a feeder station at Motherwell—which will be used for electrification of Glasgow's South side routes—can be tapped.

### Colour-light Signalling

Colour-light signalling is provided on all running lines in the present electrified area to allow closer headways for the improved electric train services, and both main lines are track circuited throughout. The new signalling circuits are designed to be immune from any magnetic or inductive effect from traction or stray circuits. On the north of the Clyde the former 56 signal boxes have been reduced to 27; these include two route-relay interlocking boxes at Hyndland and Dumbarton; at the remaining boxes the mechanical lever frames are retained with the addition of switch panels for controlling the main line signals. The B.R. automatic warning control will be provided in due course.

*(To be continued)*




The timetable board in Dundas Court and, right, diagrammatic map on overbridge leading to and from Dundas Court and the platforms

* Previous portion appeared November 12.


# Three-Car Trains for Glasgow Suburban Services

British Railways photograph

built by the Pressed Steel Co. Ltd. are fitted with

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the modern brakes for modern electric stock

Each three-car unit is made up of one driving trailer car, one non-driving motor brake car, and one battery driving trailer car. Two or three units may be coupled to form six- or nine-car trains

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# AGAINST CORROSION

## *London Exhibition and Symposium*

CORROSION of metal structures is estimated to cost the United Kingdom alone some £600 million annually. Reduction of this vast sum was the object of an exhibition and papers and discussions contributed to a symposium held last week at Olympia, where a major proportion of the world's techniques and thought on combating this evil was mustered, to form, it is thought, the largest display of anti-corrosion and metal-finishing products and services ever staged. Organised by *Corrosion Technology*, this year's event was held under the expanded title of the Corrosion and Metal Finishing Exhibition, better to describe the full scope and purpose of the event. Over 100 stands included those of the Atomic Weapons Research Association, the Department of Scientific and Industrial Research and the Tin Research Institute.

This official support was backed by the two conference sessions arranged by the Plastics Institute and the corrosion group of the Society of Chemical Industry and films. The exhibition itself covered paints, plastics, rubbers, galvanising, anodising, electroplating, metal cleaning, colouring, polishing, paint application, phosphating, plastics, coatings, metal and paint spraying, resistant metals, cathodic protection, water treatment, inhibitors and protective systems, derusting and descaling, corrosion resistant plant, linings, pipelines and protection, acid resisting floors and tanks, specialised packaging and testing apparatus.

### Economics and Corrosion

Collectively, the exhibition set out to show the many ways in which corrosion can be prevented or its onset delayed and numerous examples were given of the cost of corrosion in various branches of industry and some of the savings made possible by the use of modern techniques. The specification of unnecessarily costly alloys or unnecessarily thick metals as an insurance against corrosion, for example, can be avoided when proper protective measures are taken; in one instance 3,700 tons of steel was saved in a 225-mile 8-in. pipeline.

It is reckoned that £4 out of every £10 a farmer spends on repairs or replacement of his machinery and implements is due, directly or indirectly, to rust, much of which could now be prevented or greatly reduced.

### Cathodic Protection

It has been estimated that an unprotected tanker might last only 12 years, after which the hull would have to be renewed at a cost of £400,000. Cathodic protection of the same ship would cost £55,000, thus saving £345,000. A simple cathodic protective device installed on a trawler to control corrosion can cut the fuel bill of a 115-ft. trawler by £500 a year, it is said, and effect a further saving of at least £220 a year in maintenance and repairs. Corrosion can reduce speed and increase fuel consumption over a year by as much as 80 tons. The loss of speed follows hull and propeller roughening caused by rusting and pitting. The fitting of cathodic protection can bring about an annual saving of around £120 on propeller repairs and maintenance, £30 or more on hull repairs and £70 on descaling.

The traditional material for tanker construction is ordinary carbon steel. The seriousness of corrosion can be judged by the cost of steel renewals to keep ships seaworthy. For one ocean-going fleet of some 200 ships it has been estimated that, if no remedial measures were taken, the annual cost of corrosion would be about £2 million. During the working life of 20 years, the cost of tank corrosion in 18,000-ton d.w. vessels in the white oil trade can amount to £600,000. There have been cases where a 12,000-ton d.w. ship, after about eight years in service, has been laid up for between three to four months for repairs; the cost of the renewal of interior steelwork amounted to between £150,000 and £200,000 and, with demurrage, the total cost approached £250,000.

### Lost Metal

The vast wrought-iron roof of Cannon Street Station in London was erected nearly 95 years ago. It was 630 ft. long, 192 ft. wide and was carried by 19 trusses which spanned the station and rose to an arch 120 ft. high. When built, the ironwork weighed 2,200 tons, but on demolition about two years ago it weighed only 1,825 tons. Modern coatings seen at the exhibition would have stopped or limited this decay.

As an example of the way in which iron can resist corrosion in a dry atmosphere, the Pillar of Delhi, the Quatb Minar, in India, has stood for more than 1,600 years and resisted extensive corrosion. This phenomenon is still not yet fully understood, though eventually research may lead to a better understanding of such corrosion resistance and the duplication artificially of such behaviour among structures not so fortunately placed.

### Use of Plastics

What is believed to be the largest non-corrosive pipeline for the discharge of acid-containing waste water is installed at the cellulose plant at Monsteras, South Sweden, owned by Skogsagarnas Cellulosa Ab. (Swedish Forest Owners Association). It is made of glass fibre-reinforced polyester and is 1,640 yd. long. No painting or maintenance is required and the piping is said to have excellent resistance to diluted acids, salt solutions, oils, petrol and dry chlorine gas. This is just one of the types of plastics which serve industry in corrosive conditions shown at the exhibition.

Another role for plastics in corrosion protection was seen in plastics-coated sheet for the cladding of buildings developed by Dorman Long. The corrugated or flat sheets are coated on both sides and all edges with a new polyvinyl chloride composition, Vynasol, developed by G. A. Willis, Limited, which is produced in a range of eight colours. Accelerated weathering tests are said to have demonstrated that after the equivalent of 25 to 30 years' normal weathering the Vynasol coating still gave the sheets excellent protection. The coating is cured directly on the sheet, as distinct from an applied adhesive-lamina system, which makes it very highly resistant to corrosion creep as a result of work on the sheet or mechanical damage. The development appears to offer possibilities in vehicle bodybuilding.

ALUMINIUM AND THE ROADRAILER

**A revolutionary design by Pressed Steel Company Ltd., in conjunction with British Railways, the metallurgical "know-how" of High Duty Alloys Ltd., and Alcan aluminium ingot, go to make Britain's newest form of transport—the Roadrailer.**

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3 *Made up into a train, the Roadrailer makes its main journey overnight to most towns in Britain, at speeds up to 70 m.p.h.*

2 *At the depot, the road wheels are retracted and the rail wheels are lowered.*

4 *At destination, the Roadrailer is quickly converted back to a lorry and completes its delivery by road. Other versions are planned by Pressed Steel Co. Ltd.*

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Aluminium has played an indispensable part in the development of the Roadrailer. Because the metal is *both* robust and very light, the designers have used it exclusively in the construction of the body. Using the sides as the main strength members they have been able to give the Roadrailer shown here *both* high volume capacity and heavy payload capacity, i.e., combining 1,400 cubic feet of capacity with a maximum payload of 11 tons.

The metal's light weight also compensates for the extra weight of the alternate wheel system. What aluminium saves in dead weight can be taken on in extra payload.

Years after they go into service the Roadrailers will be structurally as sound as when new and, after washing, just as clean in appearance. That's because, unlike ferrous metals, aluminium does not rust. And it looks particularly good, even when it is unpainted.

Alcan supplied the aluminium used by High Duty Alloys in the British Railways Roadrailer. Not surprisingly, as Alcan are Britain's leading suppliers of aluminium, and the world's largest exporters, and are working, through research and development, to bring aluminium's lightness, long life, and economy to every field of transport.

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# IRISH JET SERVICE

## *End of Preparatory Work*

### BOEING 720 IN EUROPE

THE first airline outside America to place in service the Boeing 720, the slightly smaller but faster version of the widely-used 707, is Irish International Airlines, the all-embracing title of Aer Lingus and Aerlinte Eireann. Following its arrival in Dublin on November 18, the aircraft, *St. Patrick*, has been engaged on an intensive series of proving flights which culminated on Tuesday of this week in a flight to New York with a passenger list which included civic dignitaries from Ireland and from British towns and cities which are linked with the United States by connections through Dublin and Shannon. The timetable of the new service has, in fact, been very ingeniously arranged to give good connections in both directions in many cases and with the attraction also of stopping over in Dublin, if it is so desired. The new facilities should gain considerable traffic.

#### Faster than 707

With a maximum cruising speed of 615 m.p.h. the 720 is faster in the air than its sister jets. Its wing span—130 ft. 10 in.—is the same as that of the earlier 707-120, but 12 ft. shorter than that of the 707-320. In length, the new air liner is 139 ft. 6 in. compared with 138 ft. 10 in. for the 120 type and 145 ft. 6 in. for the 320. The aircraft is light enough to achieve maximum take-off efficiency without the use of water injection in the engines. Basic configuration of the aircraft provides for 16 first-class passengers in the forward compartment and 101 economy-class passengers in the rear compartment. Irish International can, of course, vary the ratio of first-class to economy-class passengers to suit requirements.

An attractive first-class lounge with two settees and table is located forward of the first-class passenger cabin and in that cabin the 16 seats are arranged two abreast on each side of the aisle. Each seat is provided with generous leg room and is equipped with an adjustable foot rest. All seats in the economy-class compartment are three abreast. All seats are of the reclining type and there are two windows for each row of seats in both compartments. An unusual feature of the interior decor is the fact that the upholstery of the seats varies every three rows from a restful green to a light golden shade. Two toilets are located in the first-class area and three in the economy-class section. Six square yards of Carrickmacross lace have been laminated in the plastics panels which divide the first-class from the economy-class compartment. The side wall panels, finished in a plastics material, are decorated with a green and cream motif, representing an Irish stone wall and a mural featuring a map of Ireland divides the first-class compartment from the lounge. The general effect of the pastel shades is very restful. The cabin is, of course, soundproofed.

A passenger service unit is fitted over each row of seats in both compartments. Each unit contains individual reading lights, fresh air vents, a hostess-call button and an illuminated "no smoking—fasten seat belt" sign. Alternate units contain a passenger address loudspeaker. Main lighting in the cabin is provided by strip cove lights in perforated panelling. Over the aisle are dome lights which throw a restrained white light. Late at night when all other lights are extinguished the dome lights are dark blue. Six hostesses are carried.

**The first Boeing 720-048 for Irish International Airlines in front of the terminal building at Dublin Airport**

#### Cargo

In the large pressurised holds fore and aft beneath the passenger cabin there is ample cargo space. The dimensions are:

| | | |
|---|---|---|
| FORWARD HOLD | | |
| Capacity | .. .. .. | 700 cu. ft.; 8,400 lb. |
| Door | .. .. .. | 48 in. by 50 in.; sill height 51 in. |
| Temperature | .. .. | 46 deg. F. minimum. |
| AFTER HOLD | | |
| Capacity | .. .. .. | 690 cu. ft.; 8,270 lb. |
| Door | .. .. .. | 48 in. by 49 in.; sill height 48 in. |
| Temperature | .. .. | 32 deg. F. minimum. |

Planning for the introduction into service of the Boeing Shamrock jets began immediately Aer Lingus-Irish International Airlines decided to purchase the aircraft as indicated in MODERN TRANSPORT of November 12. For many months staff from all departments of the company have been studying the problems associated with the operation of jet services. There have been special training courses for flight crews, air hostesses, maintenance and traffic staff. To ensure a thorough familiarity with the aircraft, selected men have been sent to America to train in the Boeing plant. Flight crews have undergone courses in America and at home air hostesses and catering staff have been making intensive preparations. As a result of this planning and training programme only a relatively short period will elapse between the date of *St. Patrick's* arrival (November 18) and her introduction into service on December 14.

#### Training and Route Proving

During Saturday, November 19, ground staff at Dublin Airport had the opportunity to study the aircraft and practice the handling techniques formulated during the training period. Afterwards the aircraft went to the hangar for maintenance work in preparation for a training and route proving programme during the following three weeks. The route proving programme has given air crews an opportunity of becoming familiar with route conditions and with the peculiarities of the various airports to which the Boeing will operate. In addition, flights have been made to alternate airports which would be used in the event of bad weather at scheduled destinations.

On November 22 the aircraft flew on route familiarisation from Dublin and Shannon to Boston and New York and during the period from November 23 to November 26 it visited American alternate airports including Gander, Goose Bay, Halifax, Montreal, Winter Locks (Connecticut), Philadelphia and Baltimore. Before going into commercial service it has also been to the European alternates at London, Prestwick and Manchester. On December 14 it enters full commercial service operating the company's three weekly services on the North Atlantic, but during the Christmas period extra services will be necessary—already six pre-Christmas flights from New York are fully booked.

#### Sister Ships

In the early spring the first Shamrock jet will be joined by her sister ships *St. Brigid* and *St. Brendan*. The former is expected in Dublin in January and the latter towards the end of February. The Irish airline will enter the summer of 1961 with the fastest aeroplanes operating between Europe and the U.S.A. The company's share of the traffic on the route has been growing since the introduction of the Irish transatlantic service in 1958 and the advent of speedy jet transport will stimulate further growth. During the east-bound peak period mid-June to mid-July next year the company will operate two return transatlantic services each day and again during the westbound peak from mid-August to mid-September there will be a twice-daily service. One of the advantages of the Boeing 720 is that in addition to the long-haul capabilities it can also be used on shorter routes when required. As already reported, in July and September next year when traffic on the Dublin—London route is at its peak Aer Lingus will provide three return jet services a day between the Irish and British capitals.

#### Shakedown Cruise

The inaugural flight, which was considered on good authority to have carried more lord mayors and mayors than any previous flight, passed off very well, despite necessity for a refuelling stop at Gander due to strong headwinds which reached 110 knots over one portion of the flight. It is unlikely, however, that the airline would complain since it has been the same wind that assisted in establishing records of 4 hr. 57 min. from New York to Shannon on November 18 and 3 hr. 9 min. from Gander to Shannon on December 2.

Commanded by Captain R. N. White, chief pilot (Atlantic), EI-ALA left Dublin Airport for Shannon at 14.37 hr. with an estimated arrival time of 15.05 hr. In fact this was exceeded by 2 min. but the hour allowed at Shannon was not fully occupied; the aircraft left for the northern end of the new jet runway there at 16.12 hr. It had taken on 36,000 kg. (79,200 lb.) of fuel bringing its fuel uplift to 89,000 lb. and the total take-off weight was 102,000 kg. (224,000 lb.) the maximum for the type. There was no attempt to hurry the aircraft off and with a ground temperature of only 4 deg. C. the run required was 7,000 ft. The aircraft climbed towards a cruising height of 35,000 ft. and its first 70 min. flying used 8,500 kg. (17,700 lb.) of fuel, which was a very reasonable figure. At this stage it was announced that a technical stop was to be made at Gander for refuelling. The estimated flight time to New York had been 7 hr. but by this stage we were already meeting headwinds of 70 m.p.h. while flying at a true air speed of 540 m.p.h. at 25,000 ft.

#### Refuelling at Gander

The crew technique involved the use of maximum cruise thrust until a speed of mach 0.87 was reached and thereafter it was held between 0.8 and 0.87 with true air speeds ranging from 480 to 520 knots against headwinds that averaged 85 knots. On that basis the fuel consumption was approximately 5,500 kg. (12,100 lb.) per hour and when we landed at Gander after 4 hr. 40 min. in the air, there were 14,000 kg. (30,800 lb.) left. Our alternates on this sector had been Halifax and Stephenville. Refuelling at Gander was achieved in less than 20 min. but this was unfortunately offset by a delay in clearance for take-off. The sector to New York was estimated to take 2 hr. 30 min. but due to being held for congestion at Idlewild, we exceeded this time by 5 min. The flight had provided Irish International Airlines with the equivalent of a shakedown cruise, and, if, as is almost certain, it maintains the standard of cabin service which it did on this occasion, it seems destined to become an even more powerful force on the North Atlantic route.

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The Westinghouse film unit has produced a 14-minute film entitled "Ship Control" which illustrates some of the varied marine installations now using Westinghouse pneumatic control equipment. Copies of this 16 mm. sound film are available on loan.

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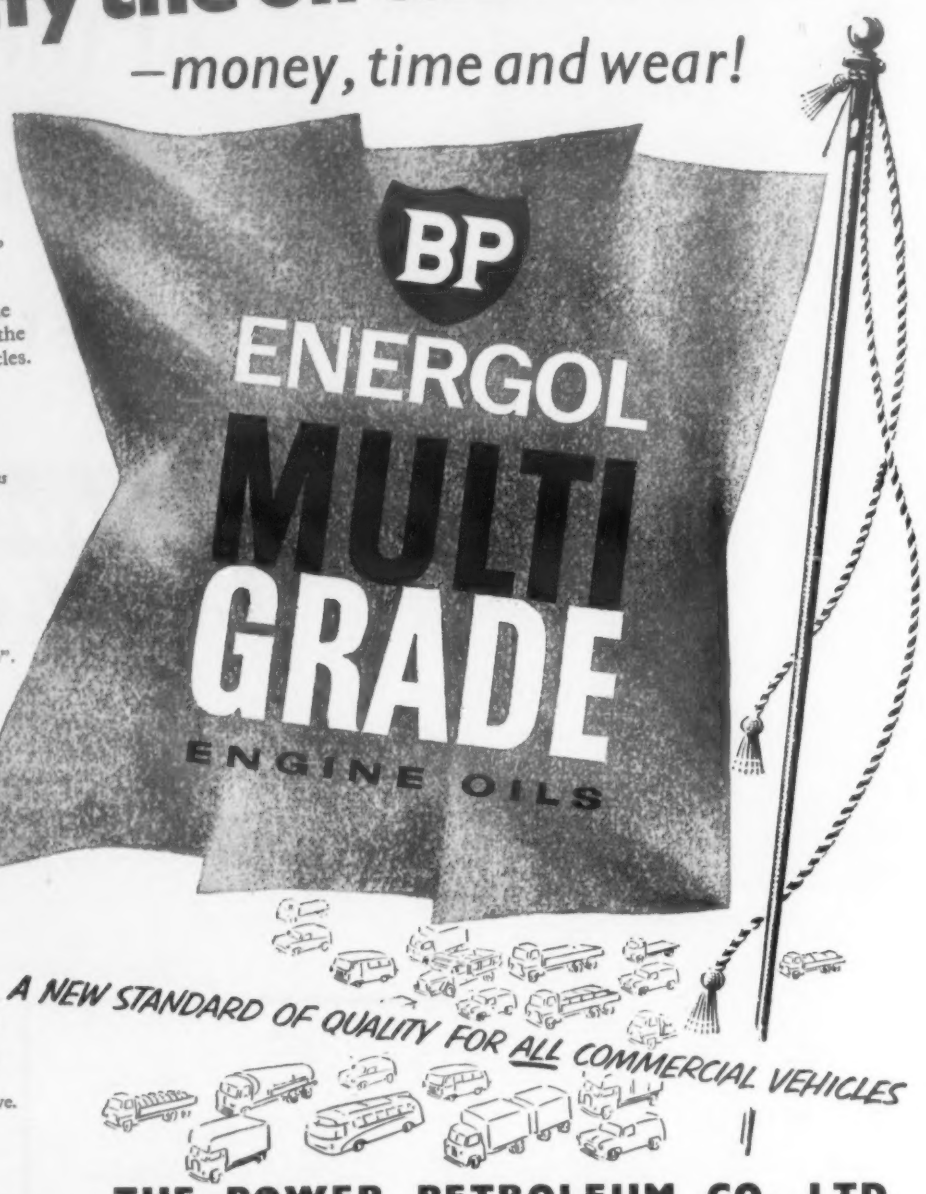


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JOHN THOMPSON GROUP

## BEDFORD BUS STATION

*(Continued from page 14)*

The general construction is of reinforced concrete, the foundations, on sand and gravel, being carried on piling. The interior decoration is mainly in grey and white, and the central heating system, which is oil-fired, includes underfloor heating in the waiting-room, inquiry hall and cafeteria. A Britannia boiler with Electrometic oil-fired burner provides the main heating water supply; there is a Neoclassic domestic hot water boiler for washing. A feature of the design is that the front of the upper floor overhangs the platform and gives cover for waiting passengers.

Forty stage services will be operated from the bus station to places as far afield as Aylesbury, Biggleswade, Bletchley, Cambridge, Dunstable, Hitchin, Huntingdon, Leighton Buzzard, Luton, Northampton, Oxford, Rushden, Stony Stratford, Whipsnade Zoo and Wolverton. It will also accommodate the company's seasonal express services to Bournemouth, Clacton-on-Sea, Dovercourt Bay, Eastbourne, Frinton-on-Sea, Great Yarmouth, Jaywick Sands, Lowestoft, Margate, Portsmouth, Ramsgate, Southend-on-Sea, Southsea, Walton-on-the-Naze and Westcliff-on-Sea, and the all-the-year-round service operated by Associated Motorways to Cheltenham with connections to all parts of South Wales and the West Country. An interesting feature of traffic activities here is the provision of a stock of folding perambulators at the luggage office. These are hired at no charge to mothers of young children who travel to Bedford by bus and wish to shop or pay visits in the town. The scheme was initiated by United Counties in Northampton and has been so successful there that additional prams are being obtained to keep up with demand.

The architect of the new station was Mr. Alan A. Briggs, F.R.I.B.A., architect to the Tilling group; the architect in charge was Mr. H. Parrish, A.R.I.B.A., and the assistant architect Mr. L. Thomas, A.R.I.B.A. The quantity surveyors were Messrs. Northcroft, Neighbour and Nicholson, and the clerk of works Mr. T. Britton. The main contractor was S. G. Sale and Co., Limited; the Cementation Co., Limited, carried out piling, C. W. Evans and Sons (London), Limited, performed heating and hot water installations, while the lift was provided by the Lift and Hoist Co., Limited. Conductors' lockers were by John Tann, Limited, lighting standards by Abacus, some electrical fittings by G.E.C. and electric clocks by Gent and Co., Limited.

### Opening Ceremony

At the opening Mr. James Gavin, the chairman (a former chief engineer of United Counties), confessed that he had ideas about a better bus station for Bedford many years ago when he was managing the Eastern National undertaking. He was therefore more than delighted to be able to call upon Alderman A. H. Randall to open what had been achieved by the company through the helpful co-operation of the borough officials. The Mayor praised the company for the services given the town and made a plea to the public to use its public transport more. They were glad to have been able to ease traffic problems by the removal of some buses from the main north to south artery but looked forward—perhaps some years—to a more fundamental relief to the town by means of an avoiding road and a new bridge over the River Ouse.

★

## SOUTHAMPTON TERMINAL

*(Continued from page 5)*

with translucent plastics diffusers together with recessed spot lights to mezzanine wood ceilings and concealed fluorescent units.

The arrangements for power, heating and lighting were designed and installed by direct labour of the mechanical and electrical section of the chief docks engineer's department under the direction of Mr. R. G. Kelly, assistant docks mechanical and electrical engineer. The civil engineering work, other than that executed under the various contracts, and in particular that required for uniting the building with the adjacent existing shed structures, was carried out by the civil engineering section of the chief docks engineer's department under the direction of Mr. W. J. Sinclair, M.I.C.E. Of the principal contractors, Trollope and Colls, Limited, was responsible for foundations, steelwork was dealt with by Hoveringham Engineering Co., Limited, and general building work was carried out by A. Monk and Co., Limited. The decor of the waiting hall and its furnishing were the responsibility of Heal's Contracts, Limited.

★

## IRISH SAILINGS

*(Continued from page 8)*

included when sufficient cargo is offering. Abroad Gibraltar is also a port of call. In Ireland Palgrave, Murphy, Limited, acts as agent in Dublin, and in Cork inquiries should be addressed to Clyde Shipping Co., Limited, which also has an office in Waterford.

Spain is served additionally by the Moss Hutchinson Line, Limited, which call at Cadiz in connection with the facilities set out on page 8. Services to the Mediterranean ports of Marseilles, main ports of Italy, and Sicily are maintained from both Belfast and Dublin by John Bruce and Co., (Shipping), Limited, which operates a regular service from Glasgow to Alexandria (Egypt). Irish agency affairs are looked after by Connolly, Shaw, Limited, St. George's Market, Belfast, and Connolly Shaw (Ireland), Limited, 4 Mary's Abbey, Dublin.

Some mention has been made of the fact that certain of the services to and from ports in Ireland are run in conjunction with sailings from ports in England and Scotland and the offices of the respective shipowners situated in the ports concerned will advise on the Irish facilities if inquiries are made. All the lines mentioned above have their agents in the Continental ports concerned, either shipowners' offices in the case of foreign lines or agencies in the case of the British or Irish lines. Some of the more important of these are: Irish Shipping Agency, 2 Quai Orteluis, Antwerp, Belgium; Nicholaus Haye and Company, Portfach 87, Bremen, Germany; and Holland Steamship Company, O. Handelskade 3, Amsterdam, Netherlands, for the Palgrave group of services, and John P. Best and Co., S.A., of Antwerp, Ghent and Terneuzen, for British and Continental Steamship sailings. In London, Stewart Transport (London), Limited, Bevis Marks House, London, E.C.3, can advise on rates and services to and from Hamburg, Bremen, Rotterdam, Amsterdam, Antwerp and Dublin, Cork, Waterford and Belfast.

# SOCIAL AND PERSONAL

### Mr. K. W. C. Grand at Exeter

AS guest of honour at the annual luncheon of the South Western section of the Institute of Transport at Exeter on December 2, Mr. K. W. C. Grand, president of the Institute and member of the B.T.C., appealed for "a really sensible transport plan." At present, he said, the whole field of transport was dealt with in an abysmal way; restrictions by way of taxation and licensing, in respect of both goods and passenger transport, were being applied without due regard to public requirements. As regards improvements and developments, he advocated an arrangement which would make quite certain that capital requirements for all form of transport were known for at least five years ahead. In a reference to his presidential address Mr. Grand reiterated the need for considering the proper age for responsibility and encouraging the young men in the industry. Where these educated themselves and showed they could carry responsibility then they should have it, he said, on the principle of appointing the best man for the job whatever his age. Youth should be given reasonable hope of promotion. The president was responding to a toast to the Institute proposed by the Mayor of Exeter (Alderman P. F. Brooks, an employee of British Railways, Southern Region). Mr. H. L. Ellis acknowledged "The South Western Section," given amusingly by Mr. T. D. Corpe, well-known advocate in the traffic courts, and Mr. K. W. L. Steele, Chief Constable of Somerset, replied for the visitors, whose health was proposed by Mr. W. H. Sutton. Mr. L. J. Crook, immediate past-chairman of the section, ably presided in the unavoidable absence of its chairman, Mr. Eric F. Horobin.

* * *

Mr. R. L. Moorcroft, D.A. (Manc.), A.R.I.B.A., has been appointed architect, chief civil engineer's office, Western Region, B.R. Mr. Moorcroft was educated at Manchester Grammar School and the Regional College of Art, Manchester. During four years in H.M. Forces he served with the Royal Engineers and latterly with the Queen Victoria's Own Madras Sappers and Miners, R.I.E. Since that time he has, with the exception of a short

**Mr. R. L. Moorcroft**

break, served in the Territorial Army (R.E.). On completion of school training, he joined the Cheshire County architect's department, moving in 1951 to the Esso Petroleum Co., Limited. In December, 1955, he entered the service of the British Transport Commission as a sectional architect and was promoted to principal assistant architect in January, 1958, which post he now vacates upon taking up his new appointment. Mr. Moorcroft is 35.

* * *

Mr. G. A. Robinson has been appointed technical assistant, Bolton Transport Department.

* * *

We record with regret the death of Brigadier John Aiton Bell, C.B.E., a former general manager of the East Indian Railway. He was 73.

* * *

Mr. W. J. Brown, assistant service manager, has been appointed service manager of Clayton Dewandre Co., Limited, to succeed the late Mr. C. E. Cousans.

* * *

Mr. E. F. Horobin, chief traffic manager, Western and Southern National Omnibus companies, is suffering ill-health, and will not be returning to duty.

* * *

Mr. R. C. Barker, at present traffic and administrative officer of Walsall Corporation Transport, has been selected, subject to confirmation, for the post of deputy manager of the undertaking.

* * *

Mr. Frank Perkins, founder and chairman of F. Perkins, Limited, has been appointed president of Peterborough Agricultural Society. He succeeds H.R.H. the Duke of Gloucester.

* * *

Mr. G. Baird, who recently retired as technical director of Girling, Limited, served his apprenticeship at Albion Motors, Limited. He subsequently became chief designer for Morris-Commercial Cars, Limited. He joined Girling in 1945 as chief engineer and in January, 1946, became technical director, which position he held until his retirement.

* * *

Since Peter Coke's comedy *A Breath of Spring* was seen in the West End many will have seen the film version *Make Mine Mink*; against this background the Euston Players last week performed *A Breath of Spring* brilliantly and with much pleasure to their audiences at the Rudolf Steiner Theatre. The L.M.R. (London) Dramatic Society members were well-done amateur crooks to a nicety and they and Miss Becky Sharp, the producer, are to be cordially congratulated.

* * *

We regret to record the death, at the age of 65, of Mr. J. R. Hind, A.M.Inst.T., public correspondence officer of the B.T.C. until he retired last month. He joined the North Eastern Railway in 1910, becoming personal assistant to the general manager, N.E.R. He inaugurated the Press section at Kings Cross in 1924. He became Press officer for the main-line railway companies in 1941. In 1948 he joined the Railway Executive concerned with public correspondence matters, continuing in the same capacity with the B.T.C. from 1953. His knowledge and urbane and friendly manner made him an ideal public relations man.

### Spurrier Memorial Lecture

THE 16th Henry Spurrier memorial lecture of the Institute of Transport will be delivered on December 12, in the Jarvis Hall (R.I.B.A.), 66 Portland Place, London, W.1, by Mr. J. M. A. Smith, director, Ford Motor Co., Limited, deputy president of the Society of Motor Manufacturers and Traders, on "The Impact of the Motor Car on Public Transport." The meeting will be open to visitors, without ticket.

* * *

Formerly deputy home sales manager (industrial), Mr. F. E. Stanley now becomes commercial manager of Blundell, Spence and Co., Limited.

* * *

We record with regret the death, at the age of 83, of Mr. W. H. Morton, former general manager of the Great Southern Railways in Ireland. He retired in 1941; from 1936 to 1941 he was a member of the board of Aer Lingus.

* * *

The Minister for Science, Lord Hailsham, has appointed Mr. Frank Cousins, general secretary of the Transport and General Workers' Union, to be a member of the Council for Scientific and Industrial Research.

* * *

With regret we record the death, at the age of 88, of Mr. A. W. Arthurton, M.Inst.T. He began his career at an early age on the Great Western Railway and served with that company for many years before becoming director of the then British Railways Press bureau from which he retired in 1935.

* * *

The B.M.C. Drivers' Club, founded just five years ago by the British Motor Corporation as an expression of its interest and goodwill towards those whose job it is to drive Austin and Morris-Commercial vehicles and Nuffield Tractors, now has a total of 95,000 current members.

* * *

Professor A. Tuskin has been appointed to succeed Professor D. M. Newitt for a term of two years as chairman of the Research Advisory Council of the B.T.C. Professor Tuskin is head of the heavy electrical engineering department of Imperial College.

* * *

Awards gained in the 1959 competitions organised by the Road Operators' Safety Council by Devon General drivers and conductors included seven bronze bars to the 30-years' brooch, representing 33 years of driving free from blameworthy accidents, and three 30-year brooches. The awards were presented at a function held at the Town Hall, Brixham, by Mr. W. W. Stokes, J.P., chairman of Brixham Urban District Council.

* * *

Mr. J. W. S. Pegrum, M.Inst.T., who is retiring from the post of general manager, Rhodesia Railways, in the new year, has relinquished the chairmanship of the Rhodesia section of the Institute of Transport, which has grown considerably during his term of office. Mr. F. W. Austin, M.B.E., past vice-chairman and a foundation member of the Institute in Rhodesia, who was for many years hon. secretary of the section, has been elected chairman, and Mr. A. H. Croxton, principal executive officer (movement), Rhodesia Railways, vice-chairman.

* * *

We deeply regret to record the death on December 2 of Mr. J. J. Finlayson, M.I.Mech.E., M.I.Loco.E., chief mechanical and electrical engineer, Scottish Region, B.R. He was appointed to that post at the beginning of this year. Mr. Finlayson was educated at Allen Glen's School and the Royal Technical College, Glasgow, and was apprenticed to the North British Locomotive Co., Limited. He entered the service of the London and North Eastern Railway in the chief mechanical engineer's department at Cowlairs works. He was successively assistant to the works manager for plant and road motors, then for carriages and wagons and finally for locomotives. Mr. Finlayson transferred to Gorton in 1947, where he took up the post of locomotive works manager and, in the same capacity, to Swindon in 1952. He was made assistant mechanical and electrical engineer, London Midland Region, in 1956; in 1959 he became mechanical engineer (general), British Railways central staff. Mr. Finlayson was 58.

**Sir Henry Spurrier, chairman and managing director of Leyland Motors, Limited, also president of the Leyland Motors Engineering Society, presents his personal prize of £25 to the best member of the Society in 1960. The recipient is a research technician, Mr. G. W. Shaw**

Mr. E. Charlesworth has retired as secretary and registrar of Fodens, Limited, at the age of 74. His successor is Mr. A. George.

* * *

Vickers-Armstrongs (Aircraft), Limited, has appointed Mr. F. H. J. Denning to the newly created post of production manager—spares.

* * *

We record with regret the death of Mr. V. E. Winbolt, chief engineer of Blue Peter Retreads, Limited. He had been with the company for 22 years.

* * *

Mr. E. L. Taylor has been appointed a director of the Western Welsh Omnibus Co., Limited, and has been elected chairman in succession to Mr. John Spencer Wills, who has resigned from the board owing to the pressure of his other business commitments. Mr. W. T. James, O.B.E. (managing director), in view of his impending retirement, and Mr. K. W. C. Grand, on account of other commitments, have also resigned from the board. Mr. W. M. Dravers and Mr. J. R. Hammond, M.B.E., have been appointed to the board.

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*IMPORTANT CONTRACTS*

# Germany Buys British Diesels

ORDERS worth more than £1 million have been placed by the German combine harvester manufacturer, Gebr Claas Maschinenfabrik, Harsewinkel, with Perkins Engines, Limited, Peterborough. They include a substantial number of the new six-cylinder, direct-injection Perkins Six 354 agricultural diesel engine introduced only this week at the Smithfield Show. The Six 354 is to be fitted in the new Claas Matador self-propelled combine, which is also being shown for the first time at Smithfield. The other power units are direct-injection Four 270 and 1.6-litre Four 99 diesels used in the S.F., Europa and Columbus combines. It is estimated that at least 40,000 Perkins engines have been sold to Germany in the past seven years.

### Leylands for Rumanian Oilfields

The Rumanian vehicle import authority, Technoimport, has ordered six Super Hippo six-wheelers from Leyland Motors, Limited, for oil-field work. The vehicles have a 22-ft. wheelbase and are fitted with 150-h.p. O680 diesel engines and Darlington type 24 winches.

### Scottish Region Contracts

The Scottish Region of British Railways has placed the following contracts:

H. M. Murray and Co., Limited, Glasgow, for a new bridge at Golf Road level crossing, Brora.

Limmer and Trinidad Lake Asphalt Co., Limited, Glasgow, for reinstatement of asphalt footpath for Post Office cables, Forth Bridge.

James Sim, Limited, Glasgow, for renewal of superstructures of three bridges between Neilston High and Patterton, for Glasgow suburban electrification.

### Southern Region Contracts

New contracts placed by the Southern Region of British Railways include the following:

Taylor Woodrow Construction, Limited, Southall, for construction of new lift shafts at Bricklayers Arms motive power depot.

Aerocem, Limited, London, W.1, for repairs to viaduct between Elephant and Castle and Loughborough Junction.

Caffin and Co., Limited, London, W.C.2, for dismantling disused viaduct at Portsmouth Harbour and reconstruction of Avon River viaduct, Downton.

### Boeing Short-Range Jet Ordered

Competition in foreign markets for the de Havilland 121 (Trident), the projected Vickers VC11 and later marks of the Sud Caravelle is hardened considerably by firm orders placed this week with Boeing Airplane Company for 80 of its new short- to medium-range 727 air liner. Worth about £125 million, the orders are for 40 each for the U.S. domestic carriers, Eastern Air Lines and United Air Lines.

### New Cable-Laying Ship

Cable and Wireless, Limited, has put out to tender to a number of British shipyards specifications and plans for a new cable-laying ship of about 8,000 tons gross, designed to lay and handle modern types of deep sea communication cables and repeaters, including the kind to be used in the 28,000-mile Commonwealth round-the-world telephone cable. When the ship is completed in 1962, it will be the first cable layer to have been owned by the company and the biggest and fastest ship in its fleet of seven vessels. Diesel-electric propulsion will provide a trial speed of 16 knots, with a steaming range of 8,000 miles and a sea endurance of 60 days. Carrying capacity will be 1,200 miles of lightweight telephone cable with repeaters, or 1,500 miles of conventional telegraph cable. It will be fully air-conditioned to work in tropical waters as well as colder climates.

### More Standee Buses for Portsmouth

Portsmouth Transport Department has ordered 12 Leopard L1 single-deck buses from Leyland Motors, Limited. They will be fitted with M.C.W. bodies designed for one-man operation, with accommodation for 42 seated and 16 standing passengers.

### Swiss Market Opening Up?

An encouraging sign of new activity in a market virtually closed to British heavy-duty goods vehicles for some years was an order received recently by A.E.C., Limited, for two Mandator chassis—an articulated tractor and a tipper—from a customer in Switzerland. The effects of Common Market and E.F.T.A. agreements might well be eventually to ease conditions for British exports in this field to "Outer Seven" markets.

### Air Cushion Take-off Study

Vertol Division of Boeing Airplane Company has been awarded a contract by the United States Army Transportation Research Command for a design study and preliminary design of a ground effect take-off and landing vehicle (GETOL). The GETOL concept combines the ground effect principle of air cushion riders with that of aerodynamic flight. In take-off the aircraft hovers a few feet above the ground while moving forwards until it reaches the speed at which the wings provide aerodynamic lift; the procedure is reversed for landing.

### Elliott Brothers Airbrasive Cutting Tool

Elliott Brothers (London), Limited, one of 12 companies comprising Elliott-Automation, Limited, has been appointed exclusive representative in the British Isles for promotion and sales of the Airbrasive unit for cutting and abrading of hard brittle materials. The tool, a product of S. S. White Industrial Division, New York City, is available at Elliott Brothers' offices for demonstration purposes. It is claimed to cut or abrade almost any hard brittle material such as germanium, silicon, ferrite, glass and others with a precisely controlled stream of gas-propelled abrasive.

### Smiths Waymouth Gauging for VC10s

All 35 of the Vickers VC10 four-jet transport aircraft for British Overseas Airways Corporation are to be fitted with fuel contents measuring equipment designed and manufactured by Waymouth Gauges and Instruments, Limited, Godalming, a company of the Smiths group. The contract also covers provision of ground testing and maintenance equipment for B.O.A.C. The VC10 will have a specially developed version of the Smiths-Waymouth Type 4 transistorised contents gauge, which will incorporate facilities for precise control of refuel and defuel operations during aircraft ground handling.

*SHIPPING AND SHIPBUILDING*

# P. and O. in Australia

THE P. and O. Steam Navigation Company announces the formation of P. and O. Company of Australia Pty., Limited, as a wholly-owned subsidiary. The new company will have two principal functions. The first will be to oversee the general interests of the P. and O. group and the group results in the Australian sphere of the P. and O. group as a whole. The second function of the new company will be to advise on and to progress any lines of development and investment in Australia itself which may seem appropriate. The company will neither own nor operate ships. The responsibility for ship management and operation, including all matters such as traffic, fares and freight rates, rests with P. and O.-Orient Lines of Australia Pty., Limited, and with the representatives in Australia of other shipowning companies of the group. The board will comprise both shipping experts representing various companies in the P. and O. group and prominent Australians unconnected with shipping. It will therefore put the P. and O. group in a strong position to serve Australian interests by maintaining the closest possible contact with all aspects of the Australian economy.

### *Central American Ferry*

A NEW ferry service between Florida and Guatemala was recently inaugurated by Sea-Highways, Inc. The 2,700-ton *Flagler Odeca*, capable of carrying 35 trailers, 40 cars and 12 passengers, started a weekly service between Port Everglades and Matias de Gálvez, transporting products and passengers between Canada and the U.S.A., and all of Central America.

### *Dock Labour Percentage Payments*

INCREASES in the percentage payments levied by the National Dock Labour Board on employers of port labour will take effect from January 1, 1961. These additions are made necessary by the introduction on that date of the port employers and registered dock workers pension scheme, and increased contributions payable from April, 1961, under the National Health scheme. The cost of training new entrants has also been taken into account.

### *Jarrow Drydock*

SOME weeks ahead of schedule, the new 600-ft. drydock at Jarrow was this week ready to receive its first vessel, a 5,700-ton cargo ship. The dock has an entrance width of 85 ft. and will be capable of holding vessels up to 24,000 tons deadweight. Owned by the Mercantile Dry Dock Co., Limited, it is the fourth to come into commission on the Tyne in the past six years. The latest dock is the first to be built with Government assistance under the Distribution of Industry Act.

### *Competition in Plenty*

SPEAKING in Larne, Mr. J. I. Duffin, Northern Ireland superintendent of the Transport Ferry Service, controlled by the British Transport Commission, denied that competition in Irish Sea shipping was being stifled by a monopoly or ring and was therefore prejudicial to the economy of Northern Ireland. Members of the Irish and British traffic conference were in competition with one another, said Mr. Duffin. Through Larne harbour alone there were at least 11 different lines operating on shipping services owned or managed by three or four different interests.

★

## A.E.C. IN PORTUGAL

### Agreement with U.T.I.C.

SIGNATURE of an exclusive agreement with Uniao de Transportadores para Importacao e Comercio, Lda., Lisbon, for the assembly and progressive manufacture of A.E.C. passenger and goods vehicles in Portugal is announced by A.E.C., Limited. The agreement follows the visit to Portugal of Mr. E. R. Hollands, director and general manager of A.E.C. (Sales), Limited, with a team of commercial and technical representatives to consult with Dr. Quintela Paixao, manager of the U.T.I.C. organisation.

U.T.I.C. operates the largest body manufacturing plant in Portugal and A.E.C. has been its largest supplier of chassis for many years. The U.T.I.C. group is a society of coach operators which was formed in 1944 from companies which operate over 2,000 coaches, or 85 per cent of passenger vehicles of this type in Portugal.

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## FINANCIAL RESULTS

**NOTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.**

### Follsain

Follsain, Limited, announces that it has acquired the whole of the issued share capital of J. R. Campbell (Engineers), Limited, the gear cutting specialist, Slough, which will be operated in conjunction with another Follsain subsidiary, Varatio-Strateline Gears, Limited, of Slough. Follsain also controls Follsain-Wycliffe Foundries, Limited, Lutterworth, and John Tann, Limited, London.

### Ford Motor

It is announced that the final dividend of the Ford Motor Co., Limited, for 1960 will be 12½ per cent (same), making 18¾ per cent (17½ per cent) for the year. The American company has agreed that minority shareholders who are prepared to dispose of their interest in the proposed takeover should be paid the 1960 final dividend as the offer came so close to the end of the financial year. The dividend is to be paid in May, 1961. The formal U.S. offer to shareholders will be about December 10.

### Transport Equipment (Thornycroft)

At the a.g.m. of John I. Thornycroft and Co., Limited, the new chairman, Mr. J. W. Thornycroft, said it was the transport equipment side of the business which was at present placing the company in the red. He added that the Hampton boatyard had also contributed to a small extent. While no actual approach had been made concerning the future of Transport Equipment (Thornycroft), Limited, it was appreciated by the board that the commercial vehicle business was tending to get into larger units with the pressure of competition from the volume producers. With the "two American-owned companies and the large British company" competition was getting ever keener and the range of vehicles of these companies was creeping up into the heavier classes.

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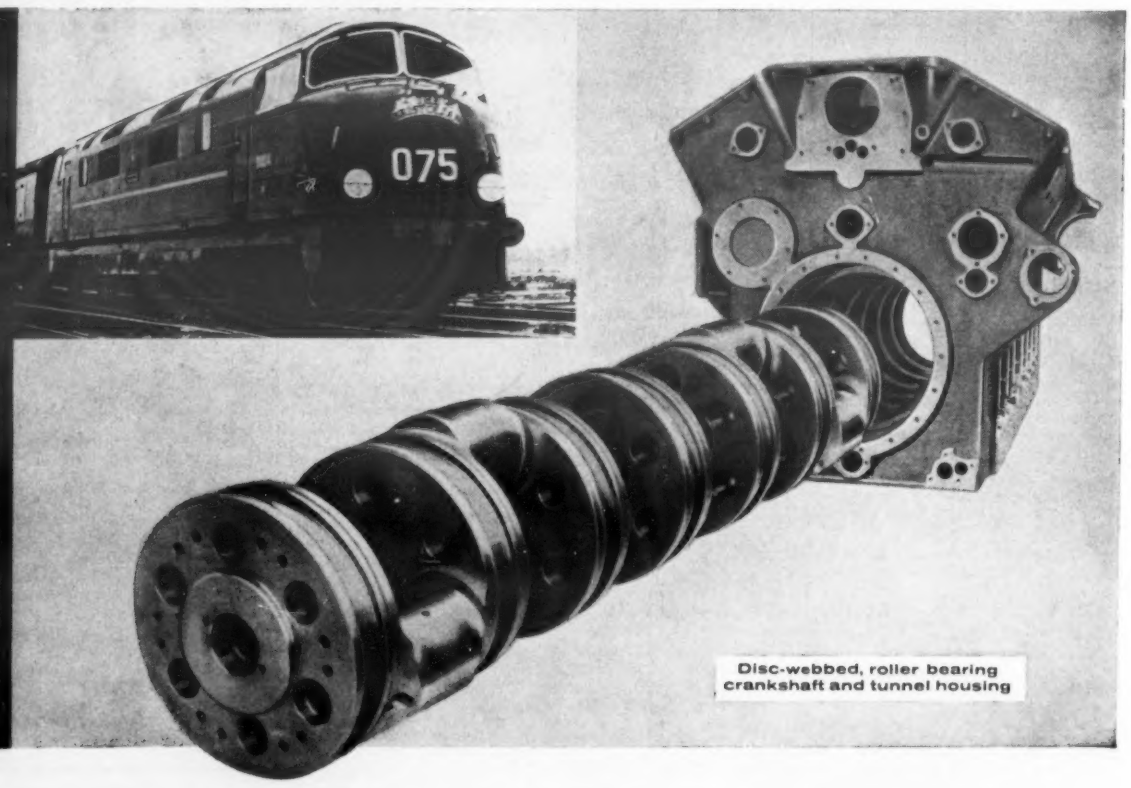

Disc-webbed, roller bearing crankshaft and tunnel housing

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For further information please write to: Maybach Sales Manager, Bristol Siddeley Engines Limited, PO Box 17, Coventry, England.

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